

WHAT IS CLAIMED IS:

1. An anti-Gal3 antibody or binding fragment thereof comprising (1) a heavy chain variable region comprising a V_H-CDR1, a V_H-CDR2, and a V_H-CDR3, and (2) a light chain variable region comprising a V_L-CDR1, a V_L-CDR2, and a V_L-CDR3; wherein

the V_H-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 36-44, 588-615,**

the V_H-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 54-60, 616-643,**

the V_H-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 70-81, 644-671,**

the V_L-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 92-101, 672-699,**

the V_L-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 111-116, 700-727,** and

the V_L-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 127-135, 728-755.**

2. The anti-Gal3 antibody or binding fragment thereof of claim 1, wherein the heavy chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 147-160, 756-783.**

3. The anti-Gal3 antibody or binding fragment thereof of claim 1 or 2, wherein the heavy chain variable region is selected from the group consisting of **SEQ ID NOs: 147-160, 756-783.**

4. The anti-Gal3 antibody or binding fragment thereof of any one of claims 1-3, wherein the light chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 173-187, 784-811.**

5. The anti-Gal3 antibody or binding fragment thereof of any one of claims 1-4, wherein the light chain variable region is selected from the group consisting of **SEQ ID NOs: 173-187, 784-811.**

6. The anti-Gal3 antibody or binding fragment thereof of any one of claims 1-5, comprising:

1) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 147** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 173**;

2) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 148** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 174**;

3) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 149** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 175**;

4) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 150** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 176**;

5) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 151** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 177**;

6) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 152** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 178**;

7) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 153** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 179**;

8) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 154** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 180**;

9) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 181**;

10) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 156** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 182**;

11) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 157** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 183**;

12) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 184**;

13) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 158** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 185**;

14) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 159** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 186**;

15) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 160** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 187**;

16) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 756** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 784**;

17) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 757** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 785**;

18) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 758** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 786**;

19) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 759** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 787**;

20) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 760** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 788**;

21) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 761** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 789**;

22) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 762** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 790**;

23) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 763** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 791**;

24) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 764** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 792**;

25) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 765** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 793**;

26) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 766** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 794**;

27) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 767** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 795**;

28) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 768** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 796**;

29) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 769** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 797**;

30) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 770** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 798**;

31) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 771** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 799**;

32) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 772** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 800**;

33) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 773** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 801**;

34) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 774** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 802**;

35) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 775** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 803**;

36) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 776** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 804**;

37) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 777** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 805**;

38) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 778** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 806**;

39) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 779** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 807**;

40) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 780** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 808**;

41) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 781** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 809**;

42) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 782** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 810**; or

43) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 783** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 811**.

7. The anti-Gal3 antibody or binding fragment thereof of any one of claims 1-6, comprising:

1) the heavy chain variable region of **SEQ ID NO: 147** and the light chain variable region of **SEQ ID NO: 173**;

- 2) the heavy chain variable region of **SEQ ID NO: 148** and the light chain variable region of **SEQ ID NO: 174**;
- 3) the heavy chain variable region of **SEQ ID NO: 149** and the light chain variable region of **SEQ ID NO: 175**;
- 4) the heavy chain variable region of **SEQ ID NO: 150** and the light chain variable region of **SEQ ID NO: 176**;
- 5) the heavy chain variable region of **SEQ ID NO: 151** and the light chain variable region of **SEQ ID NO: 177**;
- 6) the heavy chain variable region of **SEQ ID NO: 152** and the light chain variable region of **SEQ ID NO: 178**;
- 7) the heavy chain variable region of **SEQ ID NO: 153** and the light chain variable region of **SEQ ID NO: 179**;
- 8) the heavy chain variable region of **SEQ ID NO: 154** and the light chain variable region of **SEQ ID NO: 180**;
- 9) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 181**;
- 10) the heavy chain variable region of **SEQ ID NO: 156** and the light chain variable region of **SEQ ID NO: 182**;
- 11) the heavy chain variable region of **SEQ ID NO: 157** and the light chain variable region of **SEQ ID NO: 183**;
- 12) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 184**;
- 13) the heavy chain variable region of **SEQ ID NO: 158** and the light chain variable region of **SEQ ID NO: 185**;
- 14) the heavy chain variable region of **SEQ ID NO: 159** and the light chain variable region of **SEQ ID NO: 186**;
- 15) the heavy chain variable region of **SEQ ID NO: 160** and the light chain variable region of **SEQ ID NO: 187**;
- 16) the heavy chain variable region of **SEQ ID NO: 756** and the light chain variable region of **SEQ ID NO: 784**;
- 17) the heavy chain variable region of **SEQ ID NO: 757** and the light chain variable region of **SEQ ID NO: 785**;
- 18) the heavy chain variable region of **SEQ ID NO: 758** and the light chain variable region of **SEQ ID NO: 786**;

19) the heavy chain variable region of **SEQ ID NO: 759** and the light chain variable region of **SEQ ID NO: 787**;

20) the heavy chain variable region of **SEQ ID NO: 760** and the light chain variable region of **SEQ ID NO: 788**;

21) the heavy chain variable region of **SEQ ID NO: 761** and the light chain variable region of **SEQ ID NO: 789**;

22) the heavy chain variable region of **SEQ ID NO: 762** and the light chain variable region of **SEQ ID NO: 790**;

23) the heavy chain variable region of **SEQ ID NO: 763** and the light chain variable region of **SEQ ID NO: 791**;

24) the heavy chain variable region of **SEQ ID NO: 764** and the light chain variable region of **SEQ ID NO: 792**;

25) the heavy chain variable region of **SEQ ID NO: 765** and the light chain variable region of **SEQ ID NO: 793**;

26) the heavy chain variable region of **SEQ ID NO: 766** and the light chain variable region of **SEQ ID NO: 794**;

27) the heavy chain variable region of **SEQ ID NO: 767** and the light chain variable region of **SEQ ID NO: 795**;

28) the heavy chain variable region of **SEQ ID NO: 768** and the light chain variable region of **SEQ ID NO: 796**;

29) the heavy chain variable region of **SEQ ID NO: 769** and the light chain variable region of **SEQ ID NO: 797**;

30) the heavy chain variable region of **SEQ ID NO: 770** and the light chain variable region of **SEQ ID NO: 798**;

31) the heavy chain variable region of **SEQ ID NO: 771** and the light chain variable region of **SEQ ID NO: 799**;

32) the heavy chain variable region of **SEQ ID NO: 772** and the light chain variable region of **SEQ ID NO: 800**;

33) the heavy chain variable region of **SEQ ID NO: 773** and the light chain variable region of **SEQ ID NO: 801**;

34) the heavy chain variable region of **SEQ ID NO: 774** and the light chain variable region of **SEQ ID NO: 802**;

35) the heavy chain variable region of **SEQ ID NO: 775** and the light chain variable region of **SEQ ID NO: 803**;

36) the heavy chain variable region of **SEQ ID NO: 776** and the light chain variable region of **SEQ ID NO: 804**;

37) the heavy chain variable region of **SEQ ID NO: 777** and the light chain variable region of **SEQ ID NO: 805**;

38) the heavy chain variable region of **SEQ ID NO: 778** and the light chain variable region of **SEQ ID NO: 806**;

39) the heavy chain variable region of **SEQ ID NO: 779** and the light chain variable region of **SEQ ID NO: 807**;

40) the heavy chain variable region of **SEQ ID NO: 780** and the light chain variable region of **SEQ ID NO: 808**;

41) the heavy chain variable region of **SEQ ID NO: 781** and the light chain variable region of **SEQ ID NO: 809**;

42) the heavy chain variable region of **SEQ ID NO: 782** and the light chain variable region of **SEQ ID NO: 810**; or

43) the heavy chain variable region of **SEQ ID NO: 783** and the light chain variable region of **SEQ ID NO: 811**.

8. The anti-Gal3 antibody or binding fragment thereof of any one of claims 1-7, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 846.2D4, 846.2F11, 846T.10B1, 846T.2F3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H5, or a binding fragment thereof.

9. The anti-Gal3 antibody or binding fragment thereof of any one of claims 1-8, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of F846C.1B2, F846C.1F5, F846C.1H12, F846C.2H3, F846TC.14E4, F846TC.16B5, F846TC.7F10, F849C.8D10, 846.4D5, or a binding fragment thereof.

10. The anti-Gal3 antibody or binding fragment thereof of any one of claims 1-10, wherein the anti-Gal3 antibody or binding fragment thereof binds to one or more peptides of **SEQ ID NOs: 3-26**.

11. A method of treating a neurological disorder in a subject in need thereof, comprising:

administering to the subject an effective amount of an anti-Gal3 antibody or binding fragment thereof, thereby treating the neurological disorder.

12. The method of claim 11, further comprising selecting the subject as having the neurological disorder or at risk of contracting the neurological disorder prior to the administering step.

13. The method of claim 11 or 12, further comprising detecting an amelioration of symptoms associated with the neurological disorder after the administering step.

14. The method of any one of claims 11-13, wherein the neurological disorder comprises inflammation, encephalitis, Alzheimer's disease, Parkinson's disease, Huntington's disease, traumatic brain injury, spinal injury, multiple sclerosis, amyotrophic lateral sclerosis, olfactory dysfunction, aphasia, Bell's palsy, transmissible spongiform encephalopathy, Creutzfeldt-Jakob disease, fatal familial insomnia, epilepsy, seizures, neurodevelopment, Tourette's syndrome, neuroinfectious disorders, meningitis, encephalitis, bovine spongiform encephalopathy, West Nile virus encephalitis, Neuro-AIDS, fragile X syndrome, Guillain-Barre syndrome, metastases to the brain, brain cancer, or any combination thereof.

15. The method of any one of claims 11-14, wherein the neurological disorder is Alzheimer's disease, and wherein the anti-Gal3 antibody or binding fragment thereof disrupts binding between Gal3 and amyloid precursor protein (APP) or amyloid beta (A β), or both.

16. The method of claim 15, wherein the APP comprises the sequence of APP695 (SEQ ID NO: 2).

17. The method of claim 15 or 16, wherein the A β comprises A β monomers, A β oligomers, A β fibrils, or any combination thereof.

18. The method of any one of claims 15-17, wherein the A β comprises the sequence of A β 42 (SEQ ID NO: 244).

19. The method of any one of claims 15-18, wherein the anti-Gal3 antibody or binding fragment thereof reduces the binding between Gal3 and APP or A β , or both, by at least 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99%, or any percentage within a range defined by any two aforementioned percentages.

20. The method of any one of claims 11-19, wherein the anti-Gal3 antibody or binding fragment thereof promotes phagocytic function of microglia in the subject.

21. The method of any one of claims 11-20, wherein the anti-Gal3 antibody or binding fragment thereof decreases phospho-Tau levels or Gal3 levels, or both, in the brain of the subject.

22. The method of any one of claims 11-21, wherein the anti-Gal3 antibody or binding fragment thereof inhibits A β -mediated activation of microglia in the subject.

23. The method of claim 22, wherein the A β -mediated activation of microglia is inhibited by at least 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99%, or any percentage within a range defined by any two aforementioned percentages.

24. The method of any one of claims 11-23, wherein the anti-Gal3 antibody or binding fragment thereof inhibits A β fibril or oligomer formation in the subject.

25. The method of claim 24, wherein the A β fibril or oligomer formation is inhibited by at least 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99%, or any percentage within a range defined by any two aforementioned percentages.

26. The method of any one of claims 11-25, wherein the anti-Gal3 antibody or binding fragment thereof promotes neuronal regeneration in the subject.

27. The method of any one of claims 11-26, wherein the anti-Gal3 antibody or binding fragment thereof disrupts binding between Gal3 and Toll-like receptor 4 (TLR4) or triggering receptor expressed on myeloid cells 2 (TREM2), or both.

28. The method of claim 27, wherein the binding between Gal3 and TLR4 or TREM2, or both, is disrupted by at least 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99%, or any percentage within a range defined by any two aforementioned percentages.

29. The method of any one of claims 11-28, wherein more than one anti-Gal3 antibody or binding fragment thereof is administered to the subject.

30. The method of any one of claims 11-29, wherein the anti-Gal3 antibody or binding fragment thereof is administered with one or more additional therapeutic compositions.

31. The method of claim 30, wherein the one or more additional therapeutic compositions comprise a cholinesterase inhibitor, an NMDA receptor antagonist, or both.

32. The method of claim 31, wherein the cholinesterase inhibitor comprises tacrine, rivastigmine, galantamine, donepezil, or any combination thereof.

33. The method of claim 31 or 32, wherein the NMDA receptor antagonist comprises memantine.

34. A method of disrupting binding between Gal3 and APP or A β , or both, comprising contacting the APP or A β , or both, with an anti-Gal3 antibody or binding fragment thereof, thereby disrupting the binding between Gal3 and APP.

35. The method of claim 34, wherein the APP or A β , or both, is soluble or part of a first cell.

36. The method of claim 34 or 35, wherein the Gal3 is soluble or part of a second cell.

37. The method of any one of claims 34-36, wherein the APP comprises the sequence of APP695 (**SEQ ID NO: 2**).

38. The method of any one of claims 34-37, wherein the A β comprises A β monomers, A β oligomers, A β fibrils, or any combination thereof.

39. The method of any one of claims 34-38, wherein the A β comprises the sequence of A β 42 (**SEQ ID NO: 244**).

40. The method of any one of claims 34-39, wherein the anti-Gal3 antibody or binding fragment thereof reduces the binding between Gal3 and APP or A β , or both, by at least 85%.

41. The method of any one of claims 34-40, wherein the anti-Gal3 antibody or binding fragment thereof reduces the binding between Gal3 and APP or A β , or both, by at least 90%.

42. The method of any one of claims 34-41, wherein the anti-Gal3 antibody or binding fragment thereof reduces the binding between Gal3 and APP or A β , or both, by at least 95%.

43. The method of any one of claims 34-42, wherein the APP is contacted with more than one anti-Gal3 antibody or binding fragment thereof.

44. A method of treating a proteopathy in a subject in need thereof, comprising:
administering to the subject an effective amount of an anti-Gal3 antibody or binding fragment thereof, thereby treating the proteopathy in the subject.

45. The method of claim 44, further comprising selecting the subject as having the proteopathy or at risk of contracting the proteopathy prior to the administering step.

46. The method of claim 44 or 45, further comprising detecting an amelioration of symptoms associated with the proteopathy after the administering step.

47. The method of any one of claims 44-46, wherein treating the proteopathy comprises treating an active proteopathy, or a prophylactic treatment, or both, in the subject.

48. The method of any one of claims 44-47, wherein the proteopathy comprises Alzheimer's disease, cerebral β -amyloid angiopathy, retinal ganglion cell degeneration in glaucoma, Parkinson's disease, Lewy dementia, multiple system atrophy, synucleinopathy, Pick's disease, corticobasal degeneration, taupathy, frontotemporal lobar degeneration, Huntington's disease, dentatorubropallidoluysian atrophy, spinal and bulbar muscular atrophy, spinocerebellar ataxia, fragile X syndrome, Barata-Scott syndrome, Friedreich's ataxia, myotonic dystrophy, Alexander disease, familial British dementia, familial Danish dementia, Palizaeus-Merzbacher disease, seipinopathy, AA (secondary) amyloidosis, type II diabetes, fibrinogen amyloidosis, dialysis amyloidosis, inclusion body myositis/myopathy, familial amyloidotic neuropathy, senile systemic amyloidosis, serpinopathy, cardiac atrial amyloidosis,

pituitary prolactinoma, insulin amyloidosis, corneal lactoferrin amyloidosis, pulmonary alveolar proteinosis, seminal vesicle amyloid, cutaneous lichen amyloidosis, Mallory bodies, or odontogenic (Pindborg) tumor amyloid, or any disease caused by the misfolding or aggregation of proteins, or any combination thereof.

49. The method of any one of claims 44-48, wherein more than one anti-Gal3 antibody or binding fragment thereof is administered to the subject.

50. The method of any one of claims 44-49, wherein the anti-Gal3 antibody or binding fragment thereof is administered with one or more additional therapeutic compositions.

51. The method of claim 50, wherein the one or more additional therapeutic compositions comprise a cholinesterase inhibitor, an NMDA receptor antagonist, insulin, or any combination thereof.

52. The method of claim 51, wherein the cholinesterase inhibitor comprises tacrine, rivastigmine, galantamine, donepezil or any combination thereof.

53. The method of claim 51 or 52, wherein the NMDA receptor antagonist comprises memantine.

54. A method of administering an antibody to a subject, comprising:
administering to the subject an anti-Gal3 antibody or binding fragment thereof.

55. The method of claim 54, further comprising selecting the subject as having a neurological disease or a proteopathy or at risk of contracting the neurological disease or the proteopathy prior to the administering step.

56. The method of claim 54 or 55, wherein the neurological disorder comprises inflammation, encephalitis, Alzheimer's disease, Parkinson's disease, Huntington's disease, traumatic brain injury, spinal injury, multiple sclerosis, amyotrophic lateral sclerosis, olfactory dysfunction, aphasia, Bell's palsy, transmissible spongiform encephalopathy, Creutzfeldt-Jakob disease, fatal familial insomnia, epilepsy, seizures, neurodevelopment, Tourette's syndrome, neuroinfectious disorders, meningitis, encephalitis, bovine spongiform encephalopathy, West Nile virus encephalitis, Neuro-AIDS, fragile X syndrome, Guillain-Barre syndrome, metastases to the brain, brain cancer, or any combination thereof.

57. The method of any one of claims 54-56, wherein the neurological disorder is Alzheimer's disease.

58. The method of any one of claims 54-57, wherein the proteopathy comprises Alzheimer's disease, cerebral β -amyloid angiopathy, retinal ganglion cell degeneration in glaucoma, Parkinson's disease, Lewy dementia, multiple system atrophy, synucleinopathy, Pick's disease, corticobasal degeneration, taupathy, frontotemporal lobar degeneration,

Huntington's disease, dentatorubropallidoluysian atrophy, spinal and bulbar muscular atrophy, spinocerebellar ataxia, fragile X syndrome, Barata-Scott syndrome, Friedreich's ataxia, myotonic dystrophy, Alexander disease, familial British dementia, familial Danish dementia, Palizaeus-Merzbacher disease, seipinopathy, AA (secondary) amyloidosis, type II diabetes, fibrinogen amyloidosis, dialysis amyloidosis, inclusion body myositis/myopathy, familial amyloidotic neuropathy, senile systemic amyloidosis, serpinopathy, cardiac atrial amyloidosis, pituitary prolactinoma, insulin amyloidosis, corneal lactoferrin amyloidosis, pulmonary alveolar proteinosis, seminal vesicle amyloid, cutaneous lichen amyloidosis, Mallory bodies, or odontogenic (Pindborg) tumor amyloid, or any disease caused by the misfolding or aggregation of proteins, or any combination thereof.

59. The method of any one of claims 54-58, wherein more than one anti-Gal3 antibody or binding fragment thereof is administered to the subject.

60. A method of promoting neuronal regeneration in a subject in need thereof, comprising:

administering to the subject an effective amount of an anti-Gal3 antibody or binding fragment thereof, thereby promoting neuronal regeneration in the subject.

61. The method of claim 60, further comprising selecting the subject as having neuronal degeneration or at risk of having neuronal degeneration prior to the administering step.

62. The method of claim 60 or 61, further comprising detecting the neuronal regeneration in the subject after the administering step.

63. The method of any one of claims 60 or 62, wherein the subject comprises neuronal degeneration associated with inflammation, encephalitis, Alzheimer's disease, Parkinson's disease, Huntington's disease, traumatic brain injury, spinal injury, multiple sclerosis, amyotrophic lateral sclerosis, olfactory dysfunction, aphasia, Bell's palsy, transmissible spongiform encephalopathy, Creutzfeldt-Jakob disease, fatal familial insomnia, epilepsy, seizures, neurodevelopment, Tourette's syndrome, neuroinfectious disorders, meningitis, encephalitis, bovine spongiform encephalopathy, West Nile virus encephalitis, Neuro-AIDS, fragile X syndrome, Guillain-Barre syndrome, metastases to the brain, brain cancer, or any combination thereof.

64. The method of claim 63, wherein the neuronal degeneration is associated with Alzheimer's disease, and wherein the anti-Gal3 antibody or binding fragment thereof disrupts binding between Gal3 and amyloid precursor protein (APP) or amyloid beta (A β), or both.

65. The method of any one of claims 60-64, wherein more than one anti-Gal3 antibody or binding fragment thereof is administered to the subject.

66. The method of any one of claims 11-65, wherein the anti-Gal3 antibody or binding fragment thereof is administered enterally, orally, intranasally, parenterally, intracranially, subcutaneously, intramuscularly, intradermally, or intravenously, or any combination thereof.

67. The method of any one of claims 11-66, wherein the anti-Gal3 antibody or binding fragment thereof binds to one or more peptides of **SEQ ID NOs: 3-26**.

68. The method of any one of claims 11-67, wherein the anti-Gal3 antibody or binding fragment thereof binds to the N-terminal domain of Gal3, N-terminus of Gal3, or the tandem repeat domain (TRD) of Gal3.

69. The method of any one of claims 11-68, wherein the anti-Gal3 antibody or binding fragment thereof comprising (1) a heavy chain variable region comprising a V_H-CDR1, a V_H-CDR2, and a V_H-CDR3, and (2) a light chain variable region comprising a V_L-CDR1, a V_L-CDR2, and a V_L-CDR3; wherein

the V_H-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 27-44, 245-256, 588-615**,

the V_H-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 45-60, 247-248, 616-643**,

the V_H-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 61-81, 249-250, 644-671**,

the V_L-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 82-101, 251-252, 672-699**,

the V_L-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 102-116, 253, 700-727**, and

the V_L-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 117-135, 254-255, 728-755**.

70. The method of any one of claims 11-69, wherein the heavy chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 136-160, 256-257, 756-783**.

71. The method of any one of claims 11-70, wherein the heavy chain variable region is selected from the group consisting of **SEQ ID NOs: 136-160, 256-257, 756-783**.

72. The method of any one of claims 11-71, wherein the light chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 161-187, 258-259, 784-811**.

73. The method of any one of claims 11-72, wherein the light chain variable region is selected from the group consisting of **SEQ ID NOs: 161-187, 258-259, 784-811**.

74. The method of any one of claims 11-73, wherein the anti-Gal3 antibody or binding fragment thereof comprises:

1) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 136** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 161**;

2) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 137** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162**;

3) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 138** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 163**;

4) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 164**;

5) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 140** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 165**;

6) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 141** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 166**;

7) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 142** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 167**;

8) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 143** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 168**;

9) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 144** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 169**;

10) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 145** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 170**;

11) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 171**;

12) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 146** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 172**;

13) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 147** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 173**;

14) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 148** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 174**;

15) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 149** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 175**;

16) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 150** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 176**;

17) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 151** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 177**;

18) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 152** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 178**;

19) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 153** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 179**;

20) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 154** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 180**;

21) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 181**;

22) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 156** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 182**;

23) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 157** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 183**;

24) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 184**;

25) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 158** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 185**;

26) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 159** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 186**;

27) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 160** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 187**;

28) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 256** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 258**;

29) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 257** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 259**;

30) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 756** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 784**;

31) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 757** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 785**;

32) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 758** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 786**;

33) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 759** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 787**;

34) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 760** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 788**;

35) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 761** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 789**;

36) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 762** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 790**;

37) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 763** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 791**;

38) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 764** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 792**;

39) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 765** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 793**;

40) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 766** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 794**;

41) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 767** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 795**;

42) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 768** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 796**;

43) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 769** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 797**;

44) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 770** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 798**;

45) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 771** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 799**;

46) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 772** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 800**;

47) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 773** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 801**;

48) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 774** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 802**;

49) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 775** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 803**;

50) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 776** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 804**;

51) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 777** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 805**;

52) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 778** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 806**;

53) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 779** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 807**;

54) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 780** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 808**;

55) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 781** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 809**;

56) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 782** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 810**; or

57) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 783** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 811**.

75. The method of any one of claims 11-74, wherein the anti-Gal3 antibody or binding fragment thereof comprises:

1) the heavy chain variable region of **SEQ ID NO: 136** and the light chain variable region of **SEQ ID NO: 161**;

2) the heavy chain variable region of **SEQ ID NO: 137** and the light chain variable region of **SEQ ID NO: 162**;

3) the heavy chain variable region of **SEQ ID NO: 138** and the light chain variable region of **SEQ ID NO: 163**;

4) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 164**;

5) the heavy chain variable region of **SEQ ID NO: 140** and the light chain variable region of **SEQ ID NO: 165**;

6) the heavy chain variable region of **SEQ ID NO: 141** and the light chain variable region of **SEQ ID NO: 166**;

7) the heavy chain variable region of **SEQ ID NO: 142** and the light chain variable region of **SEQ ID NO: 167**;

8) the heavy chain variable region of **SEQ ID NO: 143** and the light chain variable region of **SEQ ID NO: 168**;

9) the heavy chain variable region of **SEQ ID NO: 144** and the light chain variable region of **SEQ ID NO: 169**;

10) the heavy chain variable region of **SEQ ID NO: 145** and the light chain variable region of **SEQ ID NO: 170**;

11) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 171**;

12) the heavy chain variable region of **SEQ ID NO: 146** and the light chain variable region of **SEQ ID NO: 172**;

13) the heavy chain variable region of **SEQ ID NO: 147** and the light chain variable region of **SEQ ID NO: 173**;

14) the heavy chain variable region of **SEQ ID NO: 148** and the light chain variable region of **SEQ ID NO: 174**;

15) the heavy chain variable region of **SEQ ID NO: 149** and the light chain variable region of **SEQ ID NO: 175**;

16) the heavy chain variable region of **SEQ ID NO: 150** and the light chain variable region of **SEQ ID NO: 176**;

17) the heavy chain variable region of **SEQ ID NO: 151** and the light chain variable region of **SEQ ID NO: 177**;

18) the heavy chain variable region of **SEQ ID NO: 152** and the light chain variable region of **SEQ ID NO: 178**;

19) the heavy chain variable region of **SEQ ID NO: 153** and the light chain variable region of **SEQ ID NO: 179**;

20) the heavy chain variable region of **SEQ ID NO: 154** and the light chain variable region of **SEQ ID NO: 180**;

21) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 181**;

22) the heavy chain variable region of **SEQ ID NO: 156** and the light chain variable region of **SEQ ID NO: 182**;

23) the heavy chain variable region of **SEQ ID NO: 157** and the light chain variable region of **SEQ ID NO: 183**;

24) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 184**;

25) the heavy chain variable region of **SEQ ID NO: 158** and the light chain variable region of **SEQ ID NO: 185**;

26) the heavy chain variable region of **SEQ ID NO: 159** and the light chain variable region of **SEQ ID NO: 186**;

27) the heavy chain variable region of **SEQ ID NO: 160** and the light chain variable region of **SEQ ID NO: 187**;

28) the heavy chain variable region of **SEQ ID NO: 256** and the light chain variable region of **SEQ ID NO: 258**;

29) the heavy chain variable region of **SEQ ID NO: 257** and the light chain variable region of **SEQ ID NO: 259**;

30) the heavy chain variable region of **SEQ ID NO: 756** and the light chain variable region of **SEQ ID NO: 784**;

31) the heavy chain variable region of **SEQ ID NO: 757** and the light chain variable region of **SEQ ID NO: 785**;

32) the heavy chain variable region of **SEQ ID NO: 758** and the light chain variable region of **SEQ ID NO: 786**;

33) the heavy chain variable region of **SEQ ID NO: 759** and the light chain variable region of **SEQ ID NO: 787**;

34) the heavy chain variable region of **SEQ ID NO: 760** and the light chain variable region of **SEQ ID NO: 788**;

35) the heavy chain variable region of **SEQ ID NO: 761** and the light chain variable region of **SEQ ID NO: 789**;

36) the heavy chain variable region of **SEQ ID NO: 762** and the light chain variable region of **SEQ ID NO: 790**;

37) the heavy chain variable region of **SEQ ID NO: 763** and the light chain variable region of **SEQ ID NO: 791**;

38) the heavy chain variable region of **SEQ ID NO: 764** and the light chain variable region of **SEQ ID NO: 792**;

39) the heavy chain variable region of **SEQ ID NO: 765** and the light chain variable region of **SEQ ID NO: 793**;

40) the heavy chain variable region of **SEQ ID NO: 766** and the light chain variable region of **SEQ ID NO: 794**;

41) the heavy chain variable region of **SEQ ID NO: 767** and the light chain variable region of **SEQ ID NO: 795**;

42) the heavy chain variable region of **SEQ ID NO: 768** and the light chain variable region of **SEQ ID NO: 796**;

43) the heavy chain variable region of **SEQ ID NO: 769** and the light chain variable region of **SEQ ID NO: 797**;

44) the heavy chain variable region of **SEQ ID NO: 770** and the light chain variable region of **SEQ ID NO: 798**;

45) the heavy chain variable region of **SEQ ID NO: 771** and the light chain variable region of **SEQ ID NO: 799**;

46) the heavy chain variable region of **SEQ ID NO: 772** and the light chain variable region of **SEQ ID NO: 800**;

47) the heavy chain variable region of **SEQ ID NO: 773** and the light chain variable region of **SEQ ID NO: 801**;

48) the heavy chain variable region of **SEQ ID NO: 774** and the light chain variable region of **SEQ ID NO: 802**;

49) the heavy chain variable region of **SEQ ID NO: 775** and the light chain variable region of **SEQ ID NO: 803**;

50) the heavy chain variable region of **SEQ ID NO: 776** and the light chain variable region of **SEQ ID NO: 804**;

51) the heavy chain variable region of **SEQ ID NO: 777** and the light chain variable region of **SEQ ID NO: 805**;

52) the heavy chain variable region of **SEQ ID NO: 778** and the light chain variable region of **SEQ ID NO: 806**;

53) the heavy chain variable region of **SEQ ID NO: 779** and the light chain variable region of **SEQ ID NO: 807**;

54) the heavy chain variable region of **SEQ ID NO: 780** and the light chain variable region of **SEQ ID NO: 808**;

55) the heavy chain variable region of **SEQ ID NO: 781** and the light chain variable region of **SEQ ID NO: 809**;

56) the heavy chain variable region of **SEQ ID NO: 782** and the light chain variable region of **SEQ ID NO: 810**; or

57) the heavy chain variable region of **SEQ ID NO: 783** and the light chain variable region of **SEQ ID NO: 811**.

76. The method of any one of claims 11-75, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D6, 847.14H4, 846T.1H2, mIMT001, 4A11.2B5, 4A11.H1L1, 4A11.H4L2, 4G2.2G6, 6B3.2D3, 6H6.2D6, 9H2.2H10, 13G4.2F8, 13H12.2F8, 15G7.2A7, 19D9.2E5, 23B10.2B12, 24D12.2H9, 846.2D4, 846.2F11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11,

847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, or a binding fragment thereof.

77. The method of any one of claims 11-76, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 846T.4E11, 847.11D6, 847.20H7, 847.21B11, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F2, or a binding fragment thereof.

78. The method of any one of claims 11-77, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 19B5.2E6, 14H10.2C9, 15F10.2D6, 20H5.A3, 23H9.2E4, 2D10.2B2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.2H3, F846TC.14E4, F846TC.16B5, F846TC.7F10, F849C.8D10, 846.4D5, 846T.4E11, 847.11D6, 847.20H7, 847.21B11, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F2, or a binding fragment thereof.

79. An anti-Gal3 antibody or binding fragment thereof for use in the treatment of a neurodegenerative disorder in a subject in need thereof.

80. The use of claim 79, wherein the neurodegenerative disorder comprises inflammation, encephalitis, Alzheimer's disease, Parkinson's disease, Huntington's disease, traumatic brain injury, spinal injury, multiple sclerosis, amyotrophic lateral sclerosis, olfactory dysfunction, aphasia, Bell's palsy, transmissible spongiform encephalopathy, Creutzfeldt-Jakob disease, fatal familial insomnia, epilepsy, seizures, neurodevelopment, Tourette's syndrome, neuroinfectious disorders, meningitis, encephalitis, bovine spongiform encephalopathy, West Nile virus encephalitis, Neuro-AIDS, fragile X syndrome, Guillain-Barre syndrome, metastases to the brain, brain cancer, or any combination thereof.

81. The use of claim 79 or 80, wherein the neurological disorder is Alzheimer's disease, and wherein the anti-Gal3 antibody or binding fragment thereof disrupts binding between Gal3 and amyloid precursor protein (APP) or A β , or both.

82. The use of claim 81, wherein the APP comprises the sequence of APP695 (SEQ ID NO: 2).

83. The use of claim 81 or 82, wherein the A β comprises A β monomers, A β oligomers, A β fibrils, or any combination thereof.

84. The use of any one of claims 81-83, wherein the A β comprises the sequence of A β 42 (SEQ ID NO: 244).

85. The use of any one of claims 81-84, wherein the anti-Gal3 antibody or binding fragment thereof reduces the binding between Gal3 and APP or A β , or both, by at least 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99%, or any percentage within a range defined by any two aforementioned percentages.

86. The use of any one of claims 79-85, wherein the anti-Gal3 antibody or binding fragment thereof promotes phagocytic function of microglia in the subject.

87. The use of any one of claims 79-86, wherein the anti-Gal3 antibody or binding fragment thereof inhibits A β -mediated activation of microglia in the subject.

88. The use of claim 87, wherein the A β -mediated activation of microglia is inhibited by at least 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99%, or any percentage within a range defined by any two aforementioned percentages.

89. The use of any one of claims 79-88, wherein the anti-Gal3 antibody or binding fragment thereof inhibits A β fibril or oligomer formation in the subject.

90. The use of claim 89, wherein the A β fibril or oligomer formation is inhibited by at least 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99%, or any percentage within a range defined by any two aforementioned percentages.

91. The use of any one of claims 79-90, wherein the anti-Gal3 antibody or binding fragment thereof disrupts an interaction between Gal3 and Toll-like receptor 4 (TLR4) or triggering receptor expressed on myeloid cells 2 (TREM2), or both.

92. The use of claim 91, wherein the interaction between Gal3 and TLR4 or TREM2, or both is disrupted by at least 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99%, or any percentage within a range defined by any two aforementioned percentages.

93. An anti-Gal3 antibody or binding fragment thereof for use in the treatment of a proteopathy in a subject in need thereof.

94. The use of claim 93, wherein the proteopathy comprises Alzheimer's disease, cerebral β -amyloid angiopathy, retinal ganglion cell degeneration in glaucoma, Parkinson's disease, Lewy dementia, multiple system atrophy, synucleinopathy, Pick's disease, corticobasal degeneration, taupathy, frontotemporal lobar degeneration, Huntington's disease, dentatorubropallidolusian atrophy, spinal and bulbal muscular atrophy, spinocerebellar ataxia, fragile X syndrome, Baratela-Scott syndrome, Freidrich's ataxia, myotonic dystrophy, Alexander disease, familial British dementia, familial Danish dementia, Palizaeus-Merzbacher

disease, seipinopathy, AA (secondary) amyloidosis, type II diabetes, fibrinogen amyloidosis, dialysis amyloidosis, inclusion body myositis/myopathy, familial amyloidotic neuropathy, senile systemic amyloidosis, serpinopathy, cardiac atrial amyloidosis, pituitary prolactinoma, insulin amyloidosis, corneal lactoferrin amyloidosis, pulmonary alveolar proteinosis, seminal vesicle amyloid, cutaneous lichen amyloidosis, Mallory bodies, or odontogenic (Pindborg) tumor amyloid, or any disease caused by the misfolding or aggregation of proteins, or any combination thereof.

95. An anti-Gal3 antibody or binding fragment thereof for use in promoting neuronal regeneration in a subject in need thereof.

96. The use of claim 95, wherein the subject comprises neuronal degeneration associated with inflammation, encephalitis, Alzheimer's disease, Parkinson's disease, Huntington's disease, traumatic brain injury, spinal injury, multiple sclerosis, amyotrophic lateral sclerosis, olfactory dysfunction, aphasia, Bell's palsy, transmissible spongiform encephalopathy, Creutzfeldt-Jakob disease, fatal familial insomnia, epilepsy, seizures, neurodevelopment, Tourette's syndrome, neuroinfectious disorders, meningitis, encephalitis, bovine spongiform encephalopathy, West Nile virus encephalitis, Neuro-AIDS, fragile X syndrome, Guillain-Barre syndrome, metastases to the brain, brain cancer, or any combination thereof.

97. The use of claim 96, wherein the neuronal degeneration is associated with Alzheimer's disease, and wherein the anti-Gal3 antibody or binding fragment thereof disrupts binding between Gal3 and amyloid precursor protein (APP) or amyloid beta (A β), or both, in the subject.

98. The use of any one of claims 95-97, wherein more than one anti-Gal3 antibody or binding fragment thereof is administered to the subject.

99. The use of any one of claims 79-98, wherein the anti-Gal3 antibody or binding fragment thereof binds to one or more peptides of **SEQ ID NOs: 3-26**.

100. The use of any one of claims 79-99, wherein the anti-Gal3 antibody or binding fragment thereof binds to the N-terminal domain of Gal3, N-terminus of Gal3, or the tandem repeat domain (TRD) of Gal3.

101. The use of any one of claims 79-100, wherein the anti-Gal3 antibody or binding fragment thereof comprising (1) a heavy chain variable region comprising a V_H-CDR1, a V_H-CDR2, and a V_H-CDR3, and (2) a light chain variable region comprising a V_L-CDR1, a V_L-CDR2, and a V_L-CDR3; wherein

the V_H-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 27-44, 245-246, 588-615,**

the V_H-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 45-60, 247-248, 616-643,**

the V_H-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 61-81, 249-250, 644-671,**

the V_L-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 82-101, 251-252, 672-699,**

the V_L-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 102-116, 253, 700-727,** and

the V_L-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 117-135, 254-255, 728-755.**

102. The use of any one of claims 79-101, wherein the heavy chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 136-160, 256-257, 756-783.**

103. The use of any one of claims 79-102, wherein the heavy chain variable region is selected from the group consisting of **SEQ ID NOs: 136-160, 256-257, 756-783.**

104. The use of any one of claims 79-103, wherein the light chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 161-187, 258-259, 784-811.**

105. The use of any one of claims 79-104, wherein the light chain variable region is selected from the group consisting of **SEQ ID NOs: 161-187, 258-259 784-811.**

106. The use of any one of claims 79-105, wherein the anti-Gal3 antibody or binding fragment thereof comprises:

1) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 136** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 161;**

2) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 137** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162;**

3) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 138** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 163;**

4) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 164**;

5) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 140** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 165**;

6) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 141** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 166**;

7) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 142** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 167**;

8) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 143** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 168**;

9) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 144** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 169**;

10) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 145** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 170**;

11) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 171**;

12) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 146** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 172**;

13) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 147** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 173**;

14) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 148** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 174**;

15) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 149** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 175**;

16) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 150** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 176**;

17) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 151** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 177**;

18) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 152** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 178**;

19) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 153** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 179**;

20) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 154** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 180**;

21) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 181**;

22) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 156** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 182**;

23) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 157** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 183**;

24) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 184**;

25) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 158** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 185**;

26) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 159** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 186**;

27) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 160** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 187**;

28) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 256** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 258**;

29) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 257** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 259**;

30) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 756** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 784**;

31) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 757** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 785**;

32) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 758** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 786**;

33) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 759** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 787**;

34) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 760** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 788**;

35) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 761** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 789**;

36) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 762** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 790**;

37) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 763** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 791**;

38) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 764** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 792**;

39) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 765** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 793**;

40) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 766** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 794**;

41) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 767** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 795**;

42) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 768** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 796**;

43) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 769** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 797**;

44) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 770** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 798**;

45) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 771** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 799**;

46) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 772** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 800**;

47) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 773** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 801**;

48) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 774** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 802**;

49) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 775** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 803**;

50) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 776** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 804**;

51) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 777** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 805**;

52) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 778** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 806**;

53) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 779** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 807**;

54) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 780** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 808**;

55) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 781** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 809**;

56) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 782** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 810**; or

57) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 783** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 811**.

107. The use of any one of claims 79-106, wherein the anti-Gal3 antibody or binding fragment thereof comprises:

1) the heavy chain variable region of **SEQ ID NO: 136** and the light chain variable region of **SEQ ID NO: 161**;

2) the heavy chain variable region of **SEQ ID NO: 137** and the light chain variable region of **SEQ ID NO: 162**;

3) the heavy chain variable region of **SEQ ID NO: 138** and the light chain variable region of **SEQ ID NO: 163**;

4) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 164**;

5) the heavy chain variable region of **SEQ ID NO: 140** and the light chain variable region of **SEQ ID NO: 165**;

6) the heavy chain variable region of **SEQ ID NO: 141** and the light chain variable region of **SEQ ID NO: 166**;

7) the heavy chain variable region of **SEQ ID NO: 142** and the light chain variable region of **SEQ ID NO: 167**;

8) the heavy chain variable region of **SEQ ID NO: 143** and the light chain variable region of **SEQ ID NO: 168**;

9) the heavy chain variable region of **SEQ ID NO: 144** and the light chain variable region of **SEQ ID NO: 169**;

10) the heavy chain variable region of **SEQ ID NO: 145** and the light chain variable region of **SEQ ID NO: 170**;

11) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 171**;

12) the heavy chain variable region of **SEQ ID NO: 146** and the light chain variable region of **SEQ ID NO: 172**;

13) the heavy chain variable region of **SEQ ID NO: 147** and the light chain variable region of **SEQ ID NO: 173**;

14) the heavy chain variable region of **SEQ ID NO: 148** and the light chain variable region of **SEQ ID NO: 174**;

15) the heavy chain variable region of **SEQ ID NO: 149** and the light chain variable region of **SEQ ID NO: 175**;

16) the heavy chain variable region of **SEQ ID NO: 150** and the light chain variable region of **SEQ ID NO: 176**;

17) the heavy chain variable region of **SEQ ID NO: 151** and the light chain variable region of **SEQ ID NO: 177**;

18) the heavy chain variable region of **SEQ ID NO: 152** and the light chain variable region of **SEQ ID NO: 178**;

19) the heavy chain variable region of **SEQ ID NO: 153** and the light chain variable region of **SEQ ID NO: 179**;

20) the heavy chain variable region of **SEQ ID NO: 154** and the light chain variable region of **SEQ ID NO: 180**;

21) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 181**;

22) the heavy chain variable region of **SEQ ID NO: 156** and the light chain variable region of **SEQ ID NO: 182**;

23) the heavy chain variable region of **SEQ ID NO: 157** and the light chain variable region of **SEQ ID NO: 183**;

24) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 184**;

25) the heavy chain variable region of **SEQ ID NO: 158** and the light chain variable region of **SEQ ID NO: 185**;

26) the heavy chain variable region of **SEQ ID NO: 159** and the light chain variable region of **SEQ ID NO: 186**;

27) the heavy chain variable region of **SEQ ID NO: 160** and the light chain variable region of **SEQ ID NO: 187**;

28) the heavy chain variable region of **SEQ ID NO: 256** and the light chain variable region of **SEQ ID NO: 258**;

29) the heavy chain variable region of **SEQ ID NO: 257** and the light chain variable region of **SEQ ID NO: 259**;

30) the heavy chain variable region of **SEQ ID NO: 756** and the light chain variable region of **SEQ ID NO: 784**;

31) the heavy chain variable region of **SEQ ID NO: 757** and the light chain variable region of **SEQ ID NO: 785**;

32) the heavy chain variable region of **SEQ ID NO: 758** and the light chain variable region of **SEQ ID NO: 786**;

33) the heavy chain variable region of **SEQ ID NO: 759** and the light chain variable region of **SEQ ID NO: 787**;

34) the heavy chain variable region of **SEQ ID NO: 760** and the light chain variable region of **SEQ ID NO: 788**;

35) the heavy chain variable region of **SEQ ID NO: 761** and the light chain variable region of **SEQ ID NO: 789**;

36) the heavy chain variable region of **SEQ ID NO: 762** and the light chain variable region of **SEQ ID NO: 790**;

37) the heavy chain variable region of **SEQ ID NO: 763** and the light chain variable region of **SEQ ID NO: 791**;

38) the heavy chain variable region of **SEQ ID NO: 764** and the light chain variable region of **SEQ ID NO: 792**;

39) the heavy chain variable region of **SEQ ID NO: 765** and the light chain variable region of **SEQ ID NO: 793**;

40) the heavy chain variable region of **SEQ ID NO: 766** and the light chain variable region of **SEQ ID NO: 794**;

41) the heavy chain variable region of **SEQ ID NO: 767** and the light chain variable region of **SEQ ID NO: 795**;

42) the heavy chain variable region of **SEQ ID NO: 768** and the light chain variable region of **SEQ ID NO: 796**;

43) the heavy chain variable region of **SEQ ID NO: 769** and the light chain variable region of **SEQ ID NO: 797**;

44) the heavy chain variable region of **SEQ ID NO: 770** and the light chain variable region of **SEQ ID NO: 798**;

45) the heavy chain variable region of **SEQ ID NO: 771** and the light chain variable region of **SEQ ID NO: 799**;

46) the heavy chain variable region of **SEQ ID NO: 772** and the light chain variable region of **SEQ ID NO: 800**;

47) the heavy chain variable region of **SEQ ID NO: 773** and the light chain variable region of **SEQ ID NO: 801**;

48) the heavy chain variable region of **SEQ ID NO: 774** and the light chain variable region of **SEQ ID NO: 802**;

49) the heavy chain variable region of **SEQ ID NO: 775** and the light chain variable region of **SEQ ID NO: 803**;

50) the heavy chain variable region of **SEQ ID NO: 776** and the light chain variable region of **SEQ ID NO: 804**;

51) the heavy chain variable region of **SEQ ID NO: 777** and the light chain variable region of **SEQ ID NO: 805**;

52) the heavy chain variable region of **SEQ ID NO: 778** and the light chain variable region of **SEQ ID NO: 806**;

53) the heavy chain variable region of **SEQ ID NO: 779** and the light chain variable region of **SEQ ID NO: 807**;

54) the heavy chain variable region of **SEQ ID NO: 780** and the light chain variable region of **SEQ ID NO: 808**;

55) the heavy chain variable region of **SEQ ID NO: 781** and the light chain variable region of **SEQ ID NO: 809**;

56) the heavy chain variable region of **SEQ ID NO: 782** and the light chain variable region of **SEQ ID NO: 810**; or

57) the heavy chain variable region of **SEQ ID NO: 783** and the light chain variable region of **SEQ ID NO: 811**.

108. The use of any one of claims 79-107, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 847.14H4, 846T.1H2, mIMT001, 4A11.2B5, 4A11.H1L1, 4A11.H4L2, 4G2.2G6, 6B3.2D3, 6H6.2D6, 9H2.2H10, 13G4.2F8, 13H12.2F8, 15G7.2A7, 19D9.2E5, 23B10.2B12, 24D12.2H9, 846.2D4, 846.2F11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, or a binding fragment thereof.

109. The use of any one of claims 79-108, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 846T.4E11, 847.11D6, 847.20H7, 847.21B11, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F2, or a binding fragment thereof.

110. The use of any one of claims 79-109, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 19B5.2E6, 14H10.2C9, 15F10.2D6, 20H5.A3, 23H9.2E4, 2D10.2B2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.2H3, F846TC.14E4, F846TC.16B5, F846TC.7F10, F849C.8D10,

846.4D5, 846T.4E11, 847.11D6, 847.20H7, 847.21B11, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F2, or a binding fragment thereof.

111. The use of any one of claims 79-110, wherein the anti-Gal3 antibody or binding fragment thereof is administered enterally, orally, intranasally, parenterally, intracranially, subcutaneously, intramuscularly, intradermally, or intravenously, or any combination thereof.

112. The method of any one of claims 11-78, wherein the anti-Gal3 antibody or binding fragment thereof is able to cross the blood-brain barrier.

113. The use of any one of claims 79-111, wherein the anti-Gal3 antibody or binding fragment thereof is able to cross the blood-brain barrier.

114. An antibody conjugate comprising:

an anti-Gal3 antibody or binding fragment thereof; and

a payload conjugated to the anti-Gal3 antibody or binding fragment thereof, wherein the antibody conjugate is able to cross a blood-brain barrier.

115. The antibody conjugate of claim 114, wherein the payload is not independently capable of crossing the blood-brain barrier or has low permeability across the blood-brain barrier without being conjugated to the anti-Gal3 antibody or binding fragment thereof.

116. The antibody conjugate of claim 114 or 115, wherein conjugation of the payload to the anti-Gal3 antibody or binding fragment thereof increases the permeability of the payload across the blood-brain barrier by at least 5%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%, 200%, 300%, 400%, or 500%, or any increase within a range defined by any two of the aforementioned percentages, compared to the unconjugated payload.

117. The antibody conjugate of any one of claims 114-116, wherein the permeability of the payload across the blood-brain barrier is less than 95%, 90%, 80%, 70%, 60%, 50%, 40%, 30%, 20%, 10%, 9%, 8%, 7%, 6%, 5%, 4%, 3%, 2%, or 1% of the permeability of the antibody conjugate across the blood-brain barrier.

118. The antibody conjugate of any one of claims 114-117, wherein the payload or the anti-Gal3 antibody or binding fragment thereof, or both, is used to treat a neurological disorder that is treated in the brain.

119. The antibody conjugate of any one of claims 114-118, wherein the neurological disorder comprises inflammation, encephalitis, Alzheimer's disease, Parkinson's disease, Huntington's disease, traumatic brain injury, spinal injury, multiple sclerosis, amyotrophic lateral sclerosis, olfactory dysfunction, aphasia, Bell's palsy, transmissible spongiform encephalopathy, Creutzfeldt-Jakob disease, fatal familial insomnia, epilepsy, seizures, neurodevelopment, Tourette's syndrome, neuroinfectious disorders, meningitis, encephalitis,

bovine spongiform encephalopathy, West Nile virus encephalitis, Neuro-AIDS, fragile X syndrome, Guillain-Barre syndrome, metastases to the brain, or brain cancer, or any combination thereof.

120. The antibody conjugate of any one of claims 114-119, wherein the payload is a cytotoxic payload, microtubule disrupting agent, DNA modifying agent, Akt inhibitor, polymerase inhibitor, detectable moiety, immunomodulatory agent, immune modulator, immunotoxin, nucleic acid polymer, aptamer, peptide, protein, enzyme, or any combination thereof.

121. The antibody conjugate of any one of claims 114-120, wherein the payload is a second antibody.

122. The antibody conjugate of claim 121, wherein the second antibody is not independently capable of crossing the blood-brain barrier or has low permeability across the blood-brain barrier without being conjugated to the anti-Gal3 antibody or binding fragment thereof.

123. The antibody conjugate of any one of claims 114-122, wherein the blood-brain barrier is a mammalian blood-brain barrier.

124. The antibody conjugate of any one of claims 114-123, wherein the blood-brain barrier is a human blood-brain barrier.

125. The antibody conjugate of any one of claims 114-124, wherein the antibody conjugate is formulated to be administered enterally, orally, intranasally, parenterally, intracranially, subcutaneously, intramuscularly, intradermally, or intravenously, or any combination thereof.

126. The antibody conjugate of any one of claims 114-125, wherein the anti-Gal3 antibody or binding fragment thereof binds to one or more peptides of **SEQ ID NOs: 3-26**.

127. The antibody conjugate of any one of claims 114-126, wherein the anti-Gal3 antibody or binding fragment thereof binds to the N-terminal domain of Gal3, N-terminus of Gal3, or the tandem repeat domain (TRD) of Gal3.

128. The antibody conjugate of any one of claims 114-127, wherein the anti-Gal3 antibody or binding fragment thereof belongs to bin 3, 8, 17, or 24.

129. The antibody conjugate of any one of claims 114-128, wherein the anti-Gal3 antibody or binding fragment thereof disrupts an interaction between Gal3 and an antibody that belongs to bin 3, 8, 17 or 24.

130. The antibody conjugate of any one of claims 114-129, wherein the anti-Gal3 antibody or binding fragment thereof comprising (1) a heavy chain variable region comprising

a V_H-CDR1, a V_H-CDR2, and a V_H-CDR3, and (2) a light chain variable region comprising a V_L-CDR1, a V_L-CDR2, and a V_L-CDR3; wherein

the V_H-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 27-44, 245-246, 588-615,**

the V_H-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 45-60, 247-248, 616-643,**

the V_H-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 61-81, 249-250, 644-671,**

the V_L-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 82-101, 251-252, 672-699,**

the V_L-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 102-116, 253, 700-727,** and

the V_L-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 117-135, 254-255, 728-755.**

131. The antibody conjugate of any one of claims 114-130, wherein the heavy chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 136-160, 256-257, 756-783.**

132. The antibody conjugate of any one of claims 114-131, wherein the heavy chain variable region is selected from the group consisting of **SEQ ID NOs: 136-160, 256-257, 756-783.**

133. The antibody conjugate of any one of claims 114-132, wherein the light chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 161-187, 258-259, 784-811.**

134. The antibody conjugate of any one of claims 114-133, wherein the light chain variable region is selected from the group consisting of **SEQ ID NOs: 161-187, 258-259, 784-811.**

135. The antibody conjugate of any one of claims 114-134, wherein the anti-Gal3 antibody or binding fragment thereof comprises:

(1) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 136** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 161;**

2) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 137** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162**;

3) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 138** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 163**;

4) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 164**;

5) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 140** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 165**;

6) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 141** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 166**;

7) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 142** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 167**;

8) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 143** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 168**;

9) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 144** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 169**;

10) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 145** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 170**;

11) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 171**;

12) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 146** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 172**;

13) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 147** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 173**;

14) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 148** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 174**;

15) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 149** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 175**;

16) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 150** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 176**;

17) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 151** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 177**;

18) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 152** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 178**;

19) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 153** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 179**;

20) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 154** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 180**;

21) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 181**;

22) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 156** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 182**;

23) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 157** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 183**;

24) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 184**;

25) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 158** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 185**;

26) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 159** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 186**;

27) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 160** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 187**;

28) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 256** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 258**;

29) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 257** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 259**;

30) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 756** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 784**;

31) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 757** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 785**;

32) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 758** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 786**;

33) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 759** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 787**;

34) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 760** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 788**;

35) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 761** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 789**;

36) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 762** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 790**;

37) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 763** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 791**;

38) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 764** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 792**;

39) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 765** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 793**;

40) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 766** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 794**;

41) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 767** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 795**;

42) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 768** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 796**;

43) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 769** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 797**;

44) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 770** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 798**;

45) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 771** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 799**;

46) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 772** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 800**;

47) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 773** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 801**;

48) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 774** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 802**;

49) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 775** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 803**;

50) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 776** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 804**;

51) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 777** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 805**;

52) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 778** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 806**;

53) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 779** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 807**;

54) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 780** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 808**;

55) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 781** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 809**;

56) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 782** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 810**; or

57) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 783** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 811**.

136. The antibody conjugate of any one of claims 114-135, wherein the anti-Gal3 antibody or binding fragment thereof comprises:

1) the heavy chain variable region of **SEQ ID NO: 136** and the light chain variable region of **SEQ ID NO: 161**;

2) the heavy chain variable region of **SEQ ID NO: 137** and the light chain variable region of **SEQ ID NO: 162**;

3) the heavy chain variable region of **SEQ ID NO: 138** and the light chain variable region of **SEQ ID NO: 163**;

4) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 164**;

5) the heavy chain variable region of **SEQ ID NO: 140** and the light chain variable region of **SEQ ID NO: 165**;

6) the heavy chain variable region of **SEQ ID NO: 141** and the light chain variable region of **SEQ ID NO: 166**;

7) the heavy chain variable region of **SEQ ID NO: 142** and the light chain variable region of **SEQ ID NO: 167**;

8) the heavy chain variable region of **SEQ ID NO: 143** and the light chain variable region of **SEQ ID NO: 168**;

9) the heavy chain variable region of **SEQ ID NO: 144** and the light chain variable region of **SEQ ID NO: 169**;

10) the heavy chain variable region of **SEQ ID NO: 145** and the light chain variable region of **SEQ ID NO: 170**;

11) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 171**;

12) the heavy chain variable region of **SEQ ID NO: 146** and the light chain variable region of **SEQ ID NO: 172**;

13) the heavy chain variable region of **SEQ ID NO: 147** and the light chain variable region of **SEQ ID NO: 173**;

14) the heavy chain variable region of **SEQ ID NO: 148** and the light chain variable region of **SEQ ID NO: 174**;

15) the heavy chain variable region of **SEQ ID NO: 149** and the light chain variable region of **SEQ ID NO: 175**;

16) the heavy chain variable region of **SEQ ID NO: 150** and the light chain variable region of **SEQ ID NO: 176**;

17) the heavy chain variable region of **SEQ ID NO: 151** and the light chain variable region of **SEQ ID NO: 177**;

18) the heavy chain variable region of **SEQ ID NO: 152** and the light chain variable region of **SEQ ID NO: 178**;

19) the heavy chain variable region of **SEQ ID NO: 153** and the light chain variable region of **SEQ ID NO: 179**;

20) the heavy chain variable region of **SEQ ID NO: 154** and the light chain variable region of **SEQ ID NO: 180**;

21) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 181**;

22) the heavy chain variable region of **SEQ ID NO: 156** and the light chain variable region of **SEQ ID NO: 182**;

23) the heavy chain variable region of **SEQ ID NO: 157** and the light chain variable region of **SEQ ID NO: 183**;

24) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 184**;

25) the heavy chain variable region of **SEQ ID NO: 158** and the light chain variable region of **SEQ ID NO: 185**;

26) the heavy chain variable region of **SEQ ID NO: 159** and the light chain variable region of **SEQ ID NO: 186**;

27) the heavy chain variable region of **SEQ ID NO: 160** and the light chain variable region of **SEQ ID NO: 187**;

28) the heavy chain variable region of **SEQ ID NO: 256** and the light chain variable region of **SEQ ID NO: 258**;

29) the heavy chain variable region of **SEQ ID NO: 257** and the light chain variable region of **SEQ ID NO: 259**;

30) the heavy chain variable region of **SEQ ID NO: 756** and the light chain variable region of **SEQ ID NO: 784**;

31) the heavy chain variable region of **SEQ ID NO: 757** and the light chain variable region of **SEQ ID NO: 785**;

32) the heavy chain variable region of **SEQ ID NO: 758** and the light chain variable region of **SEQ ID NO: 786**;

33) the heavy chain variable region of **SEQ ID NO: 759** and the light chain variable region of **SEQ ID NO: 787**;

34) the heavy chain variable region of **SEQ ID NO: 760** and the light chain variable region of **SEQ ID NO: 788**;

35) the heavy chain variable region of **SEQ ID NO: 761** and the light chain variable region of **SEQ ID NO: 789**;

36) the heavy chain variable region of **SEQ ID NO: 762** and the light chain variable region of **SEQ ID NO: 790**;

37) the heavy chain variable region of **SEQ ID NO: 763** and the light chain variable region of **SEQ ID NO: 791**;

38) the heavy chain variable region of **SEQ ID NO: 764** and the light chain variable region of **SEQ ID NO: 792**;

39) the heavy chain variable region of **SEQ ID NO: 765** and the light chain variable region of **SEQ ID NO: 793**;

40) the heavy chain variable region of **SEQ ID NO: 766** and the light chain variable region of **SEQ ID NO: 794**;

41) the heavy chain variable region of **SEQ ID NO: 767** and the light chain variable region of **SEQ ID NO: 795**;

42) the heavy chain variable region of **SEQ ID NO: 768** and the light chain variable region of **SEQ ID NO: 796**;

43) the heavy chain variable region of **SEQ ID NO: 769** and the light chain variable region of **SEQ ID NO: 797**;

44) the heavy chain variable region of **SEQ ID NO: 770** and the light chain variable region of **SEQ ID NO: 798**;

45) the heavy chain variable region of **SEQ ID NO: 771** and the light chain variable region of **SEQ ID NO: 799**;

46) the heavy chain variable region of **SEQ ID NO: 772** and the light chain variable region of **SEQ ID NO: 800**;

47) the heavy chain variable region of **SEQ ID NO: 773** and the light chain variable region of **SEQ ID NO: 801**;

48) the heavy chain variable region of **SEQ ID NO: 774** and the light chain variable region of **SEQ ID NO: 802**;

49) the heavy chain variable region of **SEQ ID NO: 775** and the light chain variable region of **SEQ ID NO: 803**;

50) the heavy chain variable region of **SEQ ID NO: 776** and the light chain variable region of **SEQ ID NO: 804**;

51) the heavy chain variable region of **SEQ ID NO: 777** and the light chain variable region of **SEQ ID NO: 805**;

52) the heavy chain variable region of **SEQ ID NO: 778** and the light chain variable region of **SEQ ID NO: 806**;

53) the heavy chain variable region of **SEQ ID NO: 779** and the light chain variable region of **SEQ ID NO: 807**;

54) the heavy chain variable region of **SEQ ID NO: 780** and the light chain variable region of **SEQ ID NO: 808**;

55) the heavy chain variable region of **SEQ ID NO: 781** and the light chain variable region of **SEQ ID NO: 809**;

56) the heavy chain variable region of **SEQ ID NO: 782** and the light chain variable region of **SEQ ID NO: 810**; or

57) the heavy chain variable region of **SEQ ID NO: 783** and the light chain variable region of **SEQ ID NO: 811**.

137. The antibody conjugate of any one of claims 114-136, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 847.14H4, 846T.1H2, mIMT001, 4A11.2B5, 4A11.H1L1, 4A11.H4L2, 4G2.2G6, 6B3.2D3, 6H6.2D6, 9H2.2H10, 13G4.2F8, 13H12.2F8, 15G7.2A7, 19D9.2E5, 23B10.2B12, 24D12.2H9, 846.2D4, 846.2F11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, or a binding fragment thereof.

138. The antibody conjugate of any one of claims 114-137, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5,

F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 846T.4E11, 847.11D6, 847.20H7, 847.21B11, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F2, or a binding fragment thereof.

139. The antibody conjugate of any one of claims 114-138, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 19B5.2E6, 14H10.2C9, 15F10.2D6, 20H5.A3, 23H9.2E4, 2D10.2B2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.2H3, F846TC.14E4, F846TC.16B5, F846TC.7F10, F849C.8D10, 846.4D5, 846T.4E11, 847.11D6, 847.20H7, 847.21B11, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F2, or a binding fragment thereof.

140. The antibody conjugate of any one of claims 114-139, wherein the anti-Gal3 antibody or binding fragment thereof disrupts an interaction between Gal3 and an antibody selected from 846.4D5, 15F10.2D6, F846C.1B2, and F846C.1H12.

141. A multi-specific antibody comprising a first binding domain that binds to Gal3 and a second binding domain that binds to a therapeutic target molecule located in the brain of a subject.

142. The multi-specific antibody of claim 141, wherein the second binding domain is not independently capable of crossing the blood-brain barrier or has low permeability across the blood-brain barrier without being conjugated to the anti-Gal3 antibody or binding fragment thereof.

143. The multi-specific antibody of claim 141 or 142, wherein the permeability of the second binding domain across the blood-brain barrier is less than 95%, 90%, 80%, 70%, 60%, 50%, 40%, 30%, 20%, 10%, 9%, 8%, 7%, 6%, 5%, 4%, 3%, 2%, or 1% of the permeability of the multi-specific antibody across the blood-brain barrier.

144. The multi-specific antibody of any one of claims 141-143, wherein the first binding domain that binds to Gal3 belongs to bin 3, 8, 17, or 24.

145. The multi-specific antibody of any one of claims 141-144, wherein the first binding domain that binds to Gal3 disrupts an interaction between Gal3 and an antibody that belongs to bin 3, 8, 17 or 24.

146. The multi-specific antibody of any one of claims 141-145, wherein the first binding domain that binds to Gal3 competes with an antibody that belongs to bins 3, 8, 17 or 24 for binding to Gal3.

147. The multi-specific antibody of any one of claims 141-146, wherein the first binding domain that binds to Gal3 is a binding domain of the anti-Gal3 antibody or binding fragment thereof of any one of the antibody conjugates of claims 114-140.

148. A pharmaceutical composition comprising the antibody conjugate of any one of claims 114-140 or the multi-specific antibody of any one of claims 141-147 and at least one pharmaceutically acceptable diluent, excipient, or carrier.

149. A method of delivering a payload to the central nervous system of a subject in need thereof, comprising administering to the subject an antibody conjugate comprising an anti-Gal3 antibody or binding fragment thereof and a payload conjugated to the anti-Gal3 antibody or binding fragment thereof, wherein the antibody conjugate is able to cross a blood-brain barrier.

150. A method of increasing the permeability of a payload across the blood-brain barrier of a subject in need thereof, comprising conjugating an anti-Gal3 antibody or binding fragment thereof to the payload to form an antibody conjugate.

151. The method of claim 150, further comprising administering to the subject the antibody conjugate.

152. The method of any one of claims 149-151, wherein the payload does not normally cross the blood-brain barrier.

153. The method of any one of claims 149-152, wherein conjugating the payload to the anti-Gal3 antibody or binding fragment thereof increases the permeability of the payload across the blood-brain barrier by at least 5%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%, 200%, 300%, 400%, or 500%, or any increase within a range defined by any two of the aforementioned percentages, compared to the unconjugated payload.

154. The method of any one of claims 149-153, wherein the permeability of the payload across the blood-brain barrier is less than 95%, 90%, 80%, 70%, 60%, 50%, 40%, 30%, 20%, 10%, 9%, 8%, 7%, 6%, 5%, 4%, 3%, 2%, or 1% of the permeability of the antibody conjugate across the blood-brain barrier.

155. The method of any one of claims 149-154, wherein the payload, or the anti-Gal3 antibody or binding fragment thereof, or both, is used to treat a neurological disorder.

156. The method of claim 155, wherein the neurological disorder comprises inflammation, encephalitis, Alzheimer's disease, Parkinson's disease, Huntington's disease, traumatic brain injury, spinal injury, multiple sclerosis, amyotrophic lateral sclerosis, olfactory dysfunction, aphasia, Bell's palsy, transmissible spongiform encephalopathy, Creutzfeldt-Jakob disease, fatal familial insomnia, epilepsy, seizures, neurodevelopment, Tourette's

syndrome, neuroinfectious disorders, meningitis, encephalitis, bovine spongiform encephalopathy, West Nile virus encephalitis, Neuro-AIDS, fragile X syndrome, Guillain-Barre syndrome, metastases to the brain, or brain cancer, or any combination thereof.

157. The method of any one of claims 149-156, wherein the payload is a cytotoxic payload, microtubule disrupting agent, DNA modifying agent, Akt inhibitor, polymerase inhibitor, detectable moiety, immunomodulatory agent, immune modulator, immunotoxin, nucleic acid polymer, aptamer, peptide, protein, enzyme, or any combination thereof.

158. The method of any one of claims 149-157, wherein the payload is second antibody.

159. The method of any one of claims 149-158, wherein the second antibody is not independently capable of crossing the blood-brain barrier or has low permeability across the blood-brain barrier without being conjugated to the anti-Gal3 antibody or binding fragment thereof.

160. The method of any one of claims 149-159, wherein the subject is a mammal.

161. The method of any one of claims 149-160, wherein the subject is a human.

162. The method of any one of claims 149-161, wherein the antibody conjugate is administered enterally, orally, intranasally, parenterally, intracranially, subcutaneously, intramuscularly, intradermally, or intravenously, or any combination thereof.

163. The method of any one of claims 149-162, wherein the anti-Gal3 antibody or binding fragment thereof binds to one or more peptides of **SEQ ID NOs: 3-26**.

164. The method of any one of claims 149-163, wherein the anti-Gal3 antibody or binding fragment thereof binds to the N-terminal domain of Gal3, N-terminus of Gal3, or the tandem repeat domain (TRD) of Gal3.

165. The method of any one of claims 149-164, wherein the anti-Gal3 antibody or binding fragment thereof belongs to bin 3, 8, 17, or 24.

166. The method of any one of claims 149-165, wherein the anti-Gal3 antibody or binding fragment thereof disrupts an interaction between Gal3 and an antibody that belongs to bin 3, 8, 17 or 24.

167. The method of any one of claims 149-166, wherein the anti-Gal3 antibody or binding fragment thereof competes with an antibody that belongs to bins 3, 8, 17 or 24 for binding to Gal3.

168. The method of any one of claims 149-167, wherein the anti-Gal3 antibody or binding fragment thereof comprising (1) a heavy chain variable region comprising a V_H-CDR1,

a V_H-CDR2, and a V_H-CDR3, and (2) a light chain variable region comprising a V_L-CDR1, a V_L-CDR2, and a V_L-CDR3; wherein

the V_H-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 27-44, 245-246, 588-615,**

the V_H-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 45-60, 247-248, 616-643,**

the V_H-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 61-81, 249-250, 644-671,**

the V_L-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 82-101, 251-252, 672-699,**

the V_L-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 102-116, 253, 700-727,** and

the V_L-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 117-135, 254-255, 728-755.**

169. The method of any one of claims 149-168, wherein the heavy chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 136-160, 256-257, 756-783.**

170. The method of any one of claims 149-169, wherein the heavy chain variable region is selected from the group consisting of **SEQ ID NOs: 136-160, 256-257, 756-783.**

171. The method of any one of claims 149-170, wherein the light chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 161-187, 258-259, 784-811.**

172. The method of any one of claims 149-171, wherein the light chain variable region is selected from the group consisting of **SEQ ID NOs: 161-187, 258-259, 784-811.**

173. The method of any one of claims 149-172, wherein the anti-Gal3 antibody or binding fragment thereof comprises:

1) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 136** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 161;**

2) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 137** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162;**

3) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 138** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 163**;

4) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 164**;

5) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 140** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 165**;

6) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 141** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 166**;

7) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 142** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 167**;

8) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 143** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 168**;

9) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 144** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 169**;

10) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 145** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 170**;

11) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 171**;

12) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 146** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 172**;

13) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 147** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 173**;

14) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 148** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 174**;

15) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 149** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 175**;

16) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 150** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 176**;

17) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 151** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 177**;

18) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 152** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 178**;

19) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 153** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 179**;

20) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 154** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 180**;

21) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 181**;

22) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 156** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 182**;

23) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 157** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 183**;

24) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 184**;

25) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 158** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 185**;

26) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 159** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 186**;

27) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 160** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 187**;

28) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 256** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 258**;

29) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 257** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 259**;

30) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 756** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 784**;

31) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 757** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 785**;

32) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 758** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 786**;

33) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 759** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 787**;

34) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 760** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 788**;

35) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 761** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 789**;

36) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 762** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 790**;

37) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 763** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 791**;

38) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 764** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 792**;

39) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 765** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 793**;

40) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 766** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 794**;

41) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 767** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 795**;

42) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 768** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 796**;

43) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 769** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 797**;

44) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 770** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 798**;

45) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 771** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 799**;

46) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 772** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 800**;

47) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 773** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 801**;

48) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 774** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 802**;

49) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 775** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 803**;

50) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 776** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 804**;

51) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 777** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 805**;

52) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 778** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 806**;

53) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 779** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 807**;

54) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 780** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 808**;

55) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 781** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 809**;

56) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 782** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 810**; or

57) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 783** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 811**.

174. The method of any one of claims 149-173, wherein the anti-Gal3 antibody or binding fragment thereof comprises:

1) the heavy chain variable region of **SEQ ID NO: 136** and the light chain variable region of **SEQ ID NO: 161**;

2) the heavy chain variable region of **SEQ ID NO: 137** and the light chain variable region of **SEQ ID NO: 162**;

3) the heavy chain variable region of **SEQ ID NO: 138** and the light chain variable region of **SEQ ID NO: 163**;

4) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 164**;

5) the heavy chain variable region of **SEQ ID NO: 140** and the light chain variable region of **SEQ ID NO: 165**;

6) the heavy chain variable region of **SEQ ID NO: 141** and the light chain variable region of **SEQ ID NO: 166**;

7) the heavy chain variable region of **SEQ ID NO: 142** and the light chain variable region of **SEQ ID NO: 167**;

8) the heavy chain variable region of **SEQ ID NO: 143** and the light chain variable region of **SEQ ID NO: 168**;

9) the heavy chain variable region of **SEQ ID NO: 144** and the light chain variable region of **SEQ ID NO: 169**;

10) the heavy chain variable region of **SEQ ID NO: 145** and the light chain variable region of **SEQ ID NO: 170**;

11) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 171**;

12) the heavy chain variable region of **SEQ ID NO: 146** and the light chain variable region of **SEQ ID NO: 172**;

13) the heavy chain variable region of **SEQ ID NO: 147** and the light chain variable region of **SEQ ID NO: 173**;

14) the heavy chain variable region of **SEQ ID NO: 148** and the light chain variable region of **SEQ ID NO: 174**;

15) the heavy chain variable region of **SEQ ID NO: 149** and the light chain variable region of **SEQ ID NO: 175**;

16) the heavy chain variable region of **SEQ ID NO: 150** and the light chain variable region of **SEQ ID NO: 176**;

17) the heavy chain variable region of **SEQ ID NO: 151** and the light chain variable region of **SEQ ID NO: 177**;

18) the heavy chain variable region of **SEQ ID NO: 152** and the light chain variable region of **SEQ ID NO: 178**;

19) the heavy chain variable region of **SEQ ID NO: 153** and the light chain variable region of **SEQ ID NO: 179**;

20) the heavy chain variable region of **SEQ ID NO: 154** and the light chain variable region of **SEQ ID NO: 180**;

21) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 181**;

22) the heavy chain variable region of **SEQ ID NO: 156** and the light chain variable region of **SEQ ID NO: 182**;

23) the heavy chain variable region of **SEQ ID NO: 157** and the light chain variable region of **SEQ ID NO: 183**;

24) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 184**;

25) the heavy chain variable region of **SEQ ID NO: 158** and the light chain variable region of **SEQ ID NO: 185**;

26) the heavy chain variable region of **SEQ ID NO: 159** and the light chain variable region of **SEQ ID NO: 186**;

27) the heavy chain variable region of **SEQ ID NO: 160** and the light chain variable region of **SEQ ID NO: 187**;

28) the heavy chain variable region of **SEQ ID NO: 256** and the light chain variable region of **SEQ ID NO: 258**;

29) the heavy chain variable region of **SEQ ID NO: 257** and the light chain variable region of **SEQ ID NO: 259**;

30) the heavy chain variable region of **SEQ ID NO: 756** and the light chain variable region of **SEQ ID NO: 784**;

31) the heavy chain variable region of **SEQ ID NO: 757** and the light chain variable region of **SEQ ID NO: 785**;

32) the heavy chain variable region of **SEQ ID NO: 758** and the light chain variable region of **SEQ ID NO: 786**;

33) the heavy chain variable region of **SEQ ID NO: 759** and the light chain variable region of **SEQ ID NO: 787**;

34) the heavy chain variable region of **SEQ ID NO: 760** and the light chain variable region of **SEQ ID NO: 788**;

35) the heavy chain variable region of **SEQ ID NO: 761** and the light chain variable region of **SEQ ID NO: 789**;

36) the heavy chain variable region of **SEQ ID NO: 762** and the light chain variable region of **SEQ ID NO: 790**;

37) the heavy chain variable region of **SEQ ID NO: 763** and the light chain variable region of **SEQ ID NO: 791**;

38) the heavy chain variable region of **SEQ ID NO: 764** and the light chain variable region of **SEQ ID NO: 792**;

39) the heavy chain variable region of **SEQ ID NO: 765** and the light chain variable region of **SEQ ID NO: 793**;

40) the heavy chain variable region of **SEQ ID NO: 766** and the light chain variable region of **SEQ ID NO: 794**;

41) the heavy chain variable region of **SEQ ID NO: 767** and the light chain variable region of **SEQ ID NO: 795**;

42) the heavy chain variable region of **SEQ ID NO: 768** and the light chain variable region of **SEQ ID NO: 796**;

43) the heavy chain variable region of **SEQ ID NO: 769** and the light chain variable region of **SEQ ID NO: 797**;

44) the heavy chain variable region of **SEQ ID NO: 770** and the light chain variable region of **SEQ ID NO: 798**;

45) the heavy chain variable region of **SEQ ID NO: 771** and the light chain variable region of **SEQ ID NO: 799**;

46) the heavy chain variable region of **SEQ ID NO: 772** and the light chain variable region of **SEQ ID NO: 800**;

47) the heavy chain variable region of **SEQ ID NO: 773** and the light chain variable region of **SEQ ID NO: 801**;

48) the heavy chain variable region of **SEQ ID NO: 774** and the light chain variable region of **SEQ ID NO: 802**;

49) the heavy chain variable region of **SEQ ID NO: 775** and the light chain variable region of **SEQ ID NO: 803**;

50) the heavy chain variable region of **SEQ ID NO: 776** and the light chain variable region of **SEQ ID NO: 804**;

51) the heavy chain variable region of **SEQ ID NO: 777** and the light chain variable region of **SEQ ID NO: 805**;

52) the heavy chain variable region of **SEQ ID NO: 778** and the light chain variable region of **SEQ ID NO: 806**;

53) the heavy chain variable region of **SEQ ID NO: 779** and the light chain variable region of **SEQ ID NO: 807**;

54) the heavy chain variable region of **SEQ ID NO: 780** and the light chain variable region of **SEQ ID NO: 808**;

55) the heavy chain variable region of **SEQ ID NO: 781** and the light chain variable region of **SEQ ID NO: 809**;

56) the heavy chain variable region of **SEQ ID NO: 782** and the light chain variable region of **SEQ ID NO: 810**; or

57) the heavy chain variable region of **SEQ ID NO: 783** and the light chain variable region of **SEQ ID NO: 811**.

175. The method of any one of claims 149-174, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 847.14H4, 846T.1H2, mIMT001, 4A11.2B5, 4A11.H1L1, 4A11.H4L2, 4G2.2G6, 6B3.2D3, 6H6.2D6, 9H2.2H10, 13G4.2F8, 13H12.2F8, 15G7.2A7, 19D9.2E5, 23B10.2B12, 24D12.2H9, 846.2D4, 846.2E11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, or a binding fragment thereof.

176. The method of any one of claims 149-175, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 846T.4E11, 847.11D6, 847.20H7, 847.21B11, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F2, or a binding fragment thereof.

177. The method of any one of claims 149-176, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 19B5.2E6, 14H10.2C9, 15F10.2D6, 20H5.A3, 23H9.2E4, 2D10.2B2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.2H3, F846TC.14E4, F846TC.16B5, F846TC.7F10, F849C.8D10, 846.4D5, 846T.4E11, 847.11D6, 847.20H7, 847.21B11, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F2, or a binding fragment thereof.

178. The method of any one of claims 149-177, wherein the anti-Gal3 antibody or binding fragment thereof disrupts an interaction between Gal3 and an antibody selected from 846.4D5, 15F10.2D6, F846C.1B2, and F846C.1H12.

179. The method of any one of claims 149-178, wherein the anti-Gal3 antibody or binding fragment thereof competes with an antibody that belongs to bins 3, 8, 17 or 24 for binding to Gal3.

180. A method of disrupting an interaction between galectin-3 (Gal3) and a transforming growth factor beta (TGF- β) receptor, the method comprising:

contacting an interaction between Gal3 and the TGF- β receptor with an antibody or binding fragment thereof that selectively binds to Gal3 and disrupts the interaction between Gal3 and the TGF- β receptor.

181. The method of claim 180, wherein Gal3 is expressed by a cell.

182. The method of claim 180, wherein Gal3 is secreted by a cell.

183. The method of any one of claims 180-182, wherein the TGF- β receptor is expressed by a cell.

184. A method of treating fibrosis in a subject in need thereof, the method comprising: administering to the subject an antibody or binding fragment thereof that selectively binds to Gal3 and disrupts an interaction between Gal3 and the TGF- β receptor, thereby treating fibrosis in the subject.

185. The method of claim 184, wherein the fibrosis is liver fibrosis, kidney fibrosis, cardiac fibrosis, arterial fibrosis, venous thrombosis, or pulmonary fibrosis.

186. A method of treating non-alcoholic fatty liver disease (NAFLD) or non-alcoholic steatohepatitis (NASH) in a subject in need thereof, the method comprising: administering to the subject an antibody or binding fragment thereof that selectively binds to Gal3 and disrupts an interaction between Gal3 and the TGF- β receptor, thereby treating NAFLD or NASH in the subject.

187. A method of treating an immune-related disorder in a subject in need thereof, the method comprising: administering to the subject an antibody or binding fragment thereof

that selectively binds to Gal3 and disrupts an interaction between Gal3 and the TGF- β receptor, thereby treating an immune-related disorder in the subject.

188. The method of claim 187, wherein the immune-related disorder is sepsis, atopic dermatitis, or psoriasis.

189. The method of claim 187, wherein the immune-related disorder is cancer.

190. The method of claim 189, wherein the antibody or binding fragment is administered as a supplement to PD1/PDL1 blockade therapies and/or a CTLA4 blockade therapy.

191. The method of claim 190, wherein the PD1/PDL1 blockade therapies comprise pembrolizumab, nivolumab, cemiplimab, spartalizumab, camrelizumab, sintilimab, tislelizumab, toripalimab, AMP-224, AMP-514, atezolizumab, avelumab, durvalumab, KN035, CK-301, AUNP12, CA-170, and/or BMS-986189.

192. The method of claim 190, wherein the CTLA4 blockade therapy comprises ipilimumab and/or tremilimumab.

193. The method of any one of claims 184-192, wherein the antibody or binding fragment thereof is formulated for systemic administration.

194. The method of any one of claims 184-193, wherein the antibody or binding fragment thereof is formulated for parenteral administration.

195. The method of any one of claims 184-194, wherein the subject is a mammal.

196. The method of claim 195, wherein the mammal is a human.

197. The method of any one of claims 180-196, wherein the TGF- β receptor is TGF- β receptor 1, TGF- β receptor 2, or TGF- β receptor 3.

198. A method of disrupting an interaction between Gal3 and a tumor cell surface marker comprising:

contacting the tumor cell surface marker with an anti-Gal3 antibody or binding fragment thereof specific for the N-terminal domain of Gal3, N-terminus of Gal3, or the TRD of Gal3;

wherein the tumor cell surface marker is selected from the group consisting of VEGFR1, VEGFR2, VEGFR3, EGFR, PDGFRa, PDGFRb, ErbB2, HGFR (cMet), TNF sRI, CTLA4, CD47, PD-L1, FGFR1 alpha-IIIb, FGFR1 alpha-IIIc, FGFR2 alpha-IIIc, FGFR3 IIIc, and FGFR4.

199. The method of claim 198, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2,

7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 847.14H4, 846T.1H2, mIMT001, 4A11.2B5, 4A11.H1L1, 4A11.H4L2, 4G2.2G6, 6B3.2D3, 6H6.2D6, 9H2.2H10, 13G4.2F8, 13H12.2F8, 15G7.2A7, 19D9.2E5, 23B10.2B12, 24D12.2H9, 846.2D4, 846.2F11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, or a binding fragment thereof.

200. The method of claim 189 or 199, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of: 6H6.2D6, 20H5.A3, 20D11.2C6, 4G2.2G6, 13H12.2F8, 19B5.2E6, 15G7.2A7, 23H9.2E4, 19D9.2E5, 2D10.2B2, 4A11.2B5, 14H10.2C9, 3B11.2G2, 13A12.2E5, 7D8.2D8, 15F10.2D6, 23B10.2B12, 12G5.D7, 24D12.2H9, 6B3.2D3, 13G4.2F8, 9H2.2H10, 846.1F5, 846.2H3, 846T.1H2, IMT-001, 4A11.H3L1, 4A11.H1L1, and 4A11.H4L2, or binding fragment thereof.

201. The method of any one of claims 189-200, wherein the anti-Gal3 antibody or binding fragment thereof is 2D10.2B2 or 6H6.2D6, or a binding fragment thereof.

202. A method of treating cancer in a subject in need thereof, comprising:
administering to the subject an anti-Gal3 antibody or binding fragment thereof specific for the N-terminal domain of Gal3, N-terminus of Gal3, or the TRD of Gal3;

wherein the anti-Gal3 antibody or binding fragment thereof disrupts an interaction between Gal3 and a tumor cell surface marker; and

wherein the tumor cell surface marker is selected from the group consisting of VEGFR1, VEGFR2, VEGFR3, EGFR, PDGFRa, PDGFRb, ErbB2, HGFR (cMet), TNF sRI, CTLA4, CD47, PD-L1, FGFR1 alpha-IIIb, FGFR1 alpha-IIIc, FGFR2 alpha-IIIc, FGFR3 IIIc, and FGFR4.

203. The method of claim 202, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 847.14H4, 846T.1H2, mIMT001, 4A11.2B5, 4A11.H1L1, 4A11.H4L2, 4G2.2G6, 6B3.2D3, 6H6.2D6, 9H2.2H10, 13G4.2F8, 13H12.2F8, 15G7.2A7, 19D9.2E5, 23B10.2B12, 24D12.2H9, 846.2D4,

846.2F11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, or a binding fragment thereof.

204. The method of claim 202 or 203, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of: 6H6.2D6, 20H5.A3, 20D11.2C6, 4G2.2G6, 13H12.2F8, 19B5.2E6, 15G7.2A7, 23H9.2E4, 19D9.2E5, 2D10.2B2, 4A11.2B5, 14H10.2C9, 3B11.2G2, 13A12.2E5, 7D8.2D8, 15F10.2D6, 23B10.2B12, 12G5.D7, 24D12.2H9, 6B3.2D3, 13G4.2F8, 9H2.2H10, 846.1F5, 846.2H3, 846T.1H2, IMT-001, 4A11.H3L1, 4A11.H1L1, and 4A11.H4L2, or binding fragment thereof.

205. The method of any one of claims 202-204, wherein the anti-Gal3 antibody or binding fragment thereof is 2D10.2B2 or 6H6.2D6, or binding fragment thereof.

206. The method of any one of claims 202-205, wherein the cancer is brain cancer, breast cancer, colorectal cancer, kidney cancer, liver cancer, lung cancer, pancreatic cancer, bladder cancer, stomach cancer, or a hematological malignancy.

207. The method of any one of claims 202-206, further comprising administering a standard of care treatment, wherein the anti-Gal3 antibody or binding fragment thereof is used as a supplement to the standard of care treatment.

208. The method of claim 207, wherein the standard of care treatment comprises surgery, radiation, chemotherapy, targeted therapy, immunotherapy, a PD1/PDL1 blockade therapy, a CTLA4 blockade therapy, temozolomide, or any combination thereof.

209. The method of any one of claims 180-208, wherein the antibody or binding fragment thereof binds to an N-terminal domain of Gal3.

210. The method of any one of claims 180-209, wherein the antibody or binding fragment thereof binds to an epitope present within a region of Gal3 defined by

(a) Peptide 1 (ADNFSLHDALSGSGNPNPQG; **SEQ ID NO: 3**);

(b) Peptide 4 (GAGGYPGASYPGAYPGQAPP; **SEQ ID NO: 6**);

(c) Peptide 6 (GAYPGQAPPGAYPGAPGAYP; **SEQ ID NO: 8**);

(d) Peptide 7 (AYPGAPGAYPGAPAGVYYPG; **SEQ ID NO: 9**), or a combination thereof.

211. The method of any one of claims 180-210, wherein the antibody or binding fragment thereof binds to an epitope of Gal3 comprising an amino acid sequence of GxYPG, wherein X is alanine, glycine, or valine.

212. The method of any one of claims 180-211, wherein the interaction is reduced to less than 80%, less than 75%, less than 70%, less than 65%, less than 60%, less than 55%, less than 50%, less than 45%, less than 40%, less than 35%, less than 30%, less than 25%, less than 20%, less than 15%, less than 10%, less than 5%, or less than 1%, of an interaction in absence of the antibody or binding fragment thereof.

213. The method of any one of claims 180-212, wherein the antibody or binding fragment thereof binds to Gal3 with a dissociation constant (KD) of less than 1 nM, less than 1.2 nM, less than 2 nM, less than 5 nM, less than 10 nM, less than 13.5 nM, less than 15 nM, less than 20 nM, less than 25 nM, or less than 30 nM.

214. The method of any one of claims 180-213, wherein the antibody or binding fragment comprises (1) a heavy chain variable region comprising a V_H-CDR1, a V_H-CDR2, and a V_H-CDR3; and (2) a light chain variable region comprising a V_L-CDR1, a V_L-CDR2, and a V_L-CDR3, wherein

the V_H-CDR1 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 27-36, 397-399, 588-615;**

the V_H-CDR2 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 45-54, 400-406, 616-643;**

the V_H-CDR3 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 61-69, 71, 408-416, 644-671;**

the V_L-CDR1 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 82-92, 417-426, 672-699;**

the V_L-CDR2 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 102-111, 427-428, 700-727;** and

the V_L-CDR3 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 117-127, 429-434, 728-755.**

215. The method of any one of claims 180-214, wherein the antibody or binding fragment comprises:

1) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 136** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 161**;

2) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 137** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162**;

3) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 138** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 163**;

4) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 164**;

5) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 171**;

6) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 140** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 165**;

7) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 141** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 166**;

8) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 142** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 167**;

9) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 143** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 168**;

10) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 144** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 169**;

11) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 145** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 170**;

12) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 146** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 172**;

13) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 148** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 174**;

14) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 436** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 451**;

15) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 438** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 453**;

16) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 439** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162**;

17) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 440** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 454**;

18) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 441** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 455**;

19) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 442** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 456**;

20) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 443** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 457**;

21) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 444** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 458**;

22) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 445** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 459**;

23) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 446** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 460**;

24) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 447** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 461**;

25) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 448** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 462**;

26) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 449** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 463**;

27) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 450** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 464**;

28) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 756** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 784**;

29) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 757** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 785**;

30) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 758** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 786**;

31) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 759** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 787**;

32) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 760** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 788**;

33) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 761** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 789**;

34) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 762** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 790**;

35) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 763** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 791**;

36) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 764** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 792**;

37) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 765** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 793**;

38) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 766** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 794**;

39) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 767** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 795**;

40) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 768** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 796**;

41) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 769** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 797**;

42) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 770** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 798**;

43) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 771** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 799**;

44) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 772** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 800**;

45) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 773** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 801**;

46) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 774** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 802**;

47) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 775** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 803**;

48) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 776** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 804**;

49) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 777** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 805**;

50) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 778** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 806**;

51) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 779** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 807**;

52) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 780** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 808**;

53) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 781** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 809**;

54) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 782** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 810**; or

55) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 783** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 811**.

216. The method of any one of claims 180-215, wherein the antibody or binding fragment comprises:

1) the heavy chain variable region of **SEQ ID NO: 136** and the light chain variable region of **SEQ ID NO: 161**;

2) the heavy chain variable region of **SEQ ID NO: 137** and the light chain variable region of **SEQ ID NO: 162**;

3) the heavy chain variable region of **SEQ ID NO: 138** and the light chain variable region of **SEQ ID NO: 163**;

4) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 164**;

5) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 171**;

6) the heavy chain variable region of **SEQ ID NO: 140** and the light chain variable region of **SEQ ID NO: 165**;

7) the heavy chain variable region of **SEQ ID NO: 141** and the light chain variable region of **SEQ ID NO: 166**;

8) the heavy chain variable region of **SEQ ID NO: 142** and the light chain variable region of **SEQ ID NO: 167**;

9) the heavy chain variable region of **SEQ ID NO: 143** and the light chain variable region of **SEQ ID NO: 168**;

10) the heavy chain variable region of **SEQ ID NO: 144** and the light chain variable region of **SEQ ID NO: 169**;

11) the heavy chain variable region of **SEQ ID NO: 145** and the light chain variable region of **SEQ ID NO: 170**;

12) the heavy chain variable region of **SEQ ID NO: 146** and the light chain variable region of **SEQ ID NO: 172**;

13) the heavy chain variable region of **SEQ ID NO: 148** and the light chain variable region of **SEQ ID NO: 174**;

14) the heavy chain variable region of **SEQ ID NO: 436** and the light chain variable region of **SEQ ID NO: 451**;

15) the heavy chain variable region of **SEQ ID NO: 438** and the light chain variable region of **SEQ ID NO: 453**;

16) the heavy chain variable region of **SEQ ID NO: 439** and the light chain variable region of **SEQ ID NO: 162**;

17) the heavy chain variable region of **SEQ ID NO: 440** and the light chain variable region of **SEQ ID NO: 454**;

18) the heavy chain variable region of **SEQ ID NO: 441** and the light chain variable region of **SEQ ID NO: 455**;

19) the heavy chain variable region of **SEQ ID NO: 442** and the light chain variable region of **SEQ ID NO: 456**;

20) the heavy chain variable region of **SEQ ID NO: 443** and the light chain variable region of **SEQ ID NO: 457**;

21) the heavy chain variable region of **SEQ ID NO: 444** and the light chain variable region of **SEQ ID NO: 458**;

22) the heavy chain variable region of **SEQ ID NO: 445** and the light chain variable region of **SEQ ID NO: 459**;

23) the heavy chain variable region of **SEQ ID NO: 446** and the light chain variable region of **SEQ ID NO: 460**;

24) the heavy chain variable region of **SEQ ID NO: 447** and the light chain variable region of **SEQ ID NO: 461**;

25) the heavy chain variable region of **SEQ ID NO: 448** and the light chain variable region of **SEQ ID NO: 462**;

26) the heavy chain variable region of **SEQ ID NO: 449** and the light chain variable region of **SEQ ID NO: 463**;

27) the heavy chain variable region of **SEQ ID NO: 450** and the light chain variable region of **SEQ ID NO: 464**;

28) the heavy chain variable region of **SEQ ID NO: 756** and the light chain variable region of **SEQ ID NO: 784**;

29) the heavy chain variable region of **SEQ ID NO: 757** and the light chain variable region of **SEQ ID NO: 785**;

30) the heavy chain variable region of **SEQ ID NO: 758** and the light chain variable region of **SEQ ID NO: 786**;

31) the heavy chain variable region of **SEQ ID NO: 759** and the light chain variable region of **SEQ ID NO: 787**;

32) the heavy chain variable region of **SEQ ID NO: 760** and the light chain variable region of **SEQ ID NO: 788**;

33) the heavy chain variable region of **SEQ ID NO: 761** and the light chain variable region of **SEQ ID NO: 789**;

34) the heavy chain variable region of **SEQ ID NO: 762** and the light chain variable region of **SEQ ID NO: 790**;

35) the heavy chain variable region of **SEQ ID NO: 763** and the light chain variable region of **SEQ ID NO: 791**;

36) the heavy chain variable region of **SEQ ID NO: 764** and the light chain variable region of **SEQ ID NO: 792**;

37) the heavy chain variable region of **SEQ ID NO: 765** and the light chain variable region of **SEQ ID NO: 793**;

38) the heavy chain variable region of **SEQ ID NO: 766** and the light chain variable region of **SEQ ID NO: 794**;

39) the heavy chain variable region of **SEQ ID NO: 767** and the light chain variable region of **SEQ ID NO: 795**;

40) the heavy chain variable region of **SEQ ID NO: 768** and the light chain variable region of **SEQ ID NO: 796**;

41) the heavy chain variable region of **SEQ ID NO: 769** and the light chain variable region of **SEQ ID NO: 797**;

42) the heavy chain variable region of **SEQ ID NO: 770** and the light chain variable region of **SEQ ID NO: 798**;

43) the heavy chain variable region of **SEQ ID NO: 771** and the light chain variable region of **SEQ ID NO: 799**;

44) the heavy chain variable region of **SEQ ID NO: 772** and the light chain variable region of **SEQ ID NO: 800**;

45) the heavy chain variable region of **SEQ ID NO: 773** and the light chain variable region of **SEQ ID NO: 801**;

46) the heavy chain variable region of **SEQ ID NO: 774** and the light chain variable region of **SEQ ID NO: 802**;

47) the heavy chain variable region of **SEQ ID NO: 775** and the light chain variable region of **SEQ ID NO: 803**;

48) the heavy chain variable region of **SEQ ID NO: 776** and the light chain variable region of **SEQ ID NO: 804**;

49) the heavy chain variable region of **SEQ ID NO: 777** and the light chain variable region of **SEQ ID NO: 805**;

50) the heavy chain variable region of **SEQ ID NO: 778** and the light chain variable region of **SEQ ID NO: 806**;

51) the heavy chain variable region of **SEQ ID NO: 779** and the light chain variable region of **SEQ ID NO: 807**;

52) the heavy chain variable region of **SEQ ID NO: 780** and the light chain variable region of **SEQ ID NO: 808**;

53) the heavy chain variable region of **SEQ ID NO: 781** and the light chain variable region of **SEQ ID NO: 809**;

54) the heavy chain variable region of **SEQ ID NO: 782** and the light chain variable region of **SEQ ID NO: 810**; or

55) the heavy chain variable region of **SEQ ID NO: 783** and the light chain variable region of **SEQ ID NO: 811**.

217. The method of any one of claims 180-216, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 847.14H4, 846T.1H2, mIMT001, 4A11.2B5, 4A11.H1L1, 4A11.H4L2, 4G2.2G6, 6B3.2D3, 6H6.2D6, 9H2.2H10, 13G4.2F8, 13H12.2F8, 15G7.2A7, 19D9.2E5, 23B10.2B12, 24D12.2H9, 846.2D4, 846.2F11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.2B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, or a binding fragment thereof.

218. The method of any one of claims 180-217, wherein the antibody or binding fragment is selected from the group consisting of: 13H12.2F8, 19D9.2E5, 14H10.2C9, 2D10.2B2, 4A11.2B5, 6H6.2D6, 20H5.A3, 19B5.2E6, 23H9.2E4, 20D11.2C6, 15G7.2A7, 4G2.2G6, 3B11.2G2, 13A12.2E5, 7D8.2D8, 15F10.2D6, 12G5.D7, 24D12.2H9, 13G4.2F8, 9H2.2H10, 23B10.2B12, 6B3.2D3, 846.1F5, 846.2H3, 846T.1H2, IMT-001, 4A11.H3L1, 4A11.H1L1 and 4A11.H4L2, or binding fragment thereof.

219. The method of any one of claims 180-218, wherein the antibody or binding fragment thereof comprises a humanized antibody or binding fragment.

220. The method of any one of claims 180-219, wherein the antibody or binding fragment thereof comprises a full-length antibody or a binding fragment thereof.

221. The method of any one of claims 180-220, wherein the antibody or binding fragment thereof comprises a bispecific antibody or a binding fragment thereof.

222. The method of any one of claims 180-221, wherein the antibody or binding fragment thereof comprises a monovalent Fab', a divalent Fab2, a single-chain variable fragment (scFv), a diabody, a minibody, a nanobody, a single-domain antibody (sdAb), or a camelid antibody, or binding fragment thereof.

223. The method of any one of claims 180-222, wherein the antibody or binding fragment thereof comprises an IgG framework.

224. The method of any one of claims 180-223, wherein the antibody or binding fragment thereof comprises an IgG1, IgG2, or IgG4 framework.

225. An anti-Gal3 antibody or binding fragment thereof comprising (1) a heavy chain variable region comprising a V_H-CDR1, a V_H-CDR2, and a V_H-CDR3; and (2) a light chain variable region comprising a V_L-CDR1, a V_L-CDR2, and a V_L-CDR3, wherein

the V_H-CDR1 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 27-36, 397-399,**

the V_H-CDR2 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 45-54, 400-406,**

the V_H-CDR3 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 61-69, 71, 408-416**

the V_L-CDR1 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 82-92, 417-426,**

the V_L-CDR2 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 102-111, 427-428,** and

the V_L-CDR3 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 117-127, 429-434.**

226. The anti-Gal3 antibody or binding fragment thereof of claim 225, wherein the anti-Gal3 antibody or binding fragment thereof comprises:

a) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 136** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 161;**

b) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 137** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162**;

c) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 138** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 163**;

d) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 164**;

e) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 171**;

f) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 140** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 165**;

g) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 141** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 166**;

h) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 142** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 167**;

i) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 143** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 168**;

j) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 144** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 169**;

k) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 145** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 170**;

l) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 146** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 172**;

m) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 148** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 174**;

n) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 436** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 451**;

o) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 438** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 453**;

p) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 439** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162**;

q) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 440** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 454**;

r) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 441** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 455**;

s) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 442** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 456**;

t) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 443** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 457**;

u) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 444** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 458**;

v) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 445** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 459**;

w) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 446** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 460**;

x) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 447** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 461**;

y) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 448** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 462**;

z) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 449** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 463**; or

aa) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 450** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 464**.

227. The anti-Gal3 antibody or binding fragment thereof of claim 225 or 226, wherein the antibody or binding fragment comprises:

a) the heavy chain variable region of **SEQ ID NO: 136** and the light chain variable region of **SEQ ID NO: 161**;

b) the heavy chain variable region of **SEQ ID NO: 137** and the light chain variable region of **SEQ ID NO: 162**;

c) the heavy chain variable region of **SEQ ID NO: 138** and the light chain variable region of **SEQ ID NO: 163**;

d) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 164**;

e) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 171**;

f) the heavy chain variable region of **SEQ ID NO: 140** and the light chain variable region of **SEQ ID NO: 165**;

g) the heavy chain variable region of **SEQ ID NO: 141** and the light chain variable region of **SEQ ID NO: 166**;

h) the heavy chain variable region of **SEQ ID NO: 142** and the light chain variable region of **SEQ ID NO: 167**;

i) the heavy chain variable region of **SEQ ID NO: 143** and the light chain variable region of **SEQ ID NO: 168**;

j) the heavy chain variable region of **SEQ ID NO: 144** and the light chain variable region of **SEQ ID NO: 169**;

k) the heavy chain variable region of **SEQ ID NO: 145** and the light chain variable region of **SEQ ID NO: 170**;

l) the heavy chain variable region of **SEQ ID NO: 146** and the light chain variable region of **SEQ ID NO: 172**;

m) the heavy chain variable region of **SEQ ID NO: 148** and the light chain variable region of **SEQ ID NO: 174**;

n) the heavy chain variable region of **SEQ ID NO: 436** and the light chain variable region of **SEQ ID NO: 451**;

o) the heavy chain variable region of **SEQ ID NO: 438** and the light chain variable region of **SEQ ID NO: 453**;

p) the heavy chain variable region of **SEQ ID NO: 439** and the light chain variable region of **SEQ ID NO: 162**;

q) the heavy chain variable region of **SEQ ID NO: 440** and the light chain variable region of **SEQ ID NO: 454**;

r) the heavy chain variable region of **SEQ ID NO: 441** and the light chain variable region of **SEQ ID NO: 455**;

s) the heavy chain variable region of **SEQ ID NO: 442** and the light chain variable region of **SEQ ID NO: 456**;

t) the heavy chain variable region of **SEQ ID NO: 443** and the light chain variable region of **SEQ ID NO: 457**;

u) the heavy chain variable region of **SEQ ID NO: 444** and the light chain variable region of **SEQ ID NO: 458**;

v) the heavy chain variable region of **SEQ ID NO: 445** and the light chain variable region of **SEQ ID NO: 459**;

w) the heavy chain variable region of **SEQ ID NO: 446** and the light chain variable region of **SEQ ID NO: 460**;

x) the heavy chain variable region of **SEQ ID NO: 447** and the light chain variable region of **SEQ ID NO: 461**;

y) the heavy chain variable region of **SEQ ID NO: 448** and the light chain variable region of **SEQ ID NO: 462**;

z) the heavy chain variable region of **SEQ ID NO: 449** and the light chain variable region of **SEQ ID NO: 463**; or

aa) the heavy chain variable region of **SEQ ID NO: 450** and the light chain variable region of **SEQ ID NO: 464**.

228. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-227, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of: 6H6.2D6, 20H5.A3, 20D11.2C6, 4G2.2G6, 13H12.2F8, 19B5.2E6, 15G7.2A7, 23H9.2E4, 19D9.2E5, 2D10.2B2, 4A11.2B5, 14H10.2C9, 3B11.2G2, 13A12.2E5, 7D8.2D8, 15F10.2D6, 23B10.2B12, 12G5.D7, 24D12.2H9, 6B3.2D3, 13G4.2F8, 9H2.2H10, 846.1F5, 846.2H3, 846T.1H2, IMT-001, 4A11.H3L1, 4A11.H1L1, and 4A11.H4L2 or binding fragment thereof.

229. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-228, wherein the antibody or binding fragment thereof does not bind to the C-terminus of Gal3.

230. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-229, wherein the antibody or binding fragment thereof does not bind to the C-terminal domain of Gal3.

231. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-230, wherein the antibody or binding fragment thereof does not bind to the C-terminal carbohydrate-recognition-binding domain.

232. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-231, wherein the antibody or binding fragment thereof does not bind to amino acids 112-250 of Gal3 or a subregion thereof.

233. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-232, wherein the antibody or binding fragment thereof binds to the N-terminus of Gal3.

234. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-233, wherein the antibody or binding fragment thereof binds to the N-terminal domain of Gal3.

235. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-234, wherein the antibody or binding fragment thereof binds to amino acids 1-111 of Gal3 or a subregion thereof.

236. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-235, wherein the antibody or binding fragment thereof binds to the tandem repeat domain of Gal3.

237. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-236, wherein the antibody or binding fragment thereof binds to Peptide 1 (ADNPSLHDALSGSGNPNPQG; **SEQ ID NO: 3**).

238. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-237, wherein the antibody or binding fragment thereof binds to Peptide 6 (GAYPGQAPPGAYPGAPGAYP; **SEQ ID NO: 8**).

239. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-238, wherein the antibody or binding fragment thereof binds to Peptide 7 (AYPGAPGAYPGAPAPGVYPG; **SEQ ID NO: 9**).

240. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-239, wherein the antibody or binding fragment thereof is 2D10.2B2 or 6H6.2D6, or binding fragment thereof.

241. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-240, wherein the antibody or binding fragment thereof is selected from the group consisting of 2D10.2B2 or 6H6.2D6, or binding fragment thereof.

242. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-241, wherein the antibody or binding fragment thereof inhibits tumor cell growth *in vitro*.

243. The anti-Gal3 antibody or binding fragment thereof of any one of claims 225-242, wherein the antibody or binding fragment thereof retards brain tumor growth.

244. A pharmaceutical composition comprising the anti-Gal3 antibody or binding fragment thereof of any one of claims 225-243 and at least one pharmaceutically acceptable carrier, excipient, diluent, or adjuvant.

245. An antibody that binds to human Gal3 and competes with an anti-Gal3 antibody or binding fragment thereof for binding to human Gal3, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 847.14H4, 846T.1H2, mIMT001, 4A11.2B5, 4A11.H1L1, 4A11.H4L2, 4G2.2G6, 6B3.2D3, 6H6.2D6, 9H2.2H10, 13G4.2F8, 13H12.2F8, 15G7.2A7, 19D9.2E5, 23B10.2B12, 24D12.2H9, 846.2D4, 846.2F11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, or a binding fragment thereof.

246. An antibody that binds to human Gal3 and competes with an anti-Gal3 antibody or binding fragment thereof for binding to human Gal3, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of: 6H6.2D6, 20H5.A3, 20D11.2C6, 4G2.2G6, 13H12.2F8, 19B5.2E6, 15G7.2A7, 23H9.2E4, 19D9.2E5, 2D10.2B2, 4A11.2B5, 14H10.2C9, 3B11.2G2, 13A12.2E5, 7D8.2D8, 15F10.2D6, 23B10.2B12,

12G5.D7, 24D12.2H9, 6B3.2D3, 13G4.2F8, 9H2.2H10, 846.1F5, 846.2H3, 846T.1H2, IMT001, 4A11.H3L1, 4A11.H1L1, and 4A11.H4L2 or binding fragment thereof.

247. A method for identifying an antibody or binding fragment capable of disrupting an interaction between Gal3 and a TGF-b receptor, the method comprising:

(a) contacting Gal3 protein with an antibody or binding fragment that selectively binds to Gal3, thereby forming a Gal3-antibody complex;

(b) contacting the Gal3-antibody complex with the TGF-b receptor protein;

(c) removing unbound TGF-b receptor protein; and

(d) detecting TGF-b receptor protein bound to the Gal3-antibody complex;

wherein the antibody or binding fragment is capable of disrupting an interaction of Gal3 and the TGF-b receptor when the TGF-b receptor protein is not detected in (d).

248. The method of claim 247, wherein the method comprises an immunoassay.

249. The method of claim 248, wherein the immunoassay is an enzyme-linked immunosorbent assay.

250. The method of any one of claims 247-249, wherein the TGF-b receptor is TGF-b receptor 1, TGF-b receptor 2, or TGF-b receptor 3.

251. Use of an anti-Gal3 antibody or binding fragment in the manufacture of a medicament or composition for the treatment of fibrosis, liver fibrosis, non-alcoholic fatty liver disease (NAFLD), non-alcoholic steatohepatitis (NASH), kidney fibrosis, cardiac fibrosis, arterial fibrosis, venous thrombosis, or pulmonary fibrosis.

252. Use of an anti-Gal3 antibody or binding fragment in the manufacture of a medicament or composition for the treatment of an immune-related disorder.

253. The use of claim 252, wherein the immune-related disorder is sepsis, atopic dermatitis, or psoriasis.

254. The use of claim 252, wherein the immune-related disorder is cancer.

255. The use of claim 254, wherein the medicament is used as a supplement to PD1/PDL1 blockade therapies or CTLA4 blockade therapies.

256. The use of claim 255, wherein the PD1/PDL1 blockade therapies comprise pembrolizumab, nivolumab, cemiplimab, spartalizumab, camrelizumab, sintilimab, tislelizumab, toripalimab, AMP-224, AMP-514, atezolizumab, avelumab, durvalumab, KN035, CK-301, AUNP12, CA-170, and/or BMS-986189.

257. The use of claim 255, wherein the CTLA4 blockade therapy comprises ipilimumab and/or tremilimumab.

258. Use of an anti-Gal3 antibody or binding fragment thereof for the treatment of fibrosis, liver fibrosis, NAFLD, NASH, kidney fibrosis, cardiac fibrosis, arterial fibrosis, venous thrombosis, or pulmonary fibrosis.

259. Use of an anti-Gal3 antibody or binding fragment thereof for the treatment of cancer.

260. The use of claim 259, wherein the cancer is brain cancer, breast cancer, colorectal cancer, kidney cancer, liver cancer, lung cancer, pancreatic cancer, bladder cancer, stomach cancer, or a hematological malignancy.

261. Use of an anti-Gal3 antibody or binding fragment thereof for the inhibition of tumor cell growth *in vitro*.

262. Use of an anti-Gal3 antibody or binding fragment thereof for the retardation of brain tumor growth.

263. The use of any one of claims 252-262, wherein the anti-Gal3 antibody or binding fragment thereof comprises (1) a heavy chain variable region comprising a V_H-CDR1, a V_H-CDR2, and a V_H-CDR3; and (2) a light chain variable region comprising a V_L-CDR1, a V_L-CDR2, and a V_L-CDR3, wherein

the V_H-CDR1 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 27-36, 397-399, 588-615,**

the V_H-CDR2 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 45-54, 400-406, 616-643,**

the V_H-CDR3 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 61-69, 71, 408-416, 644-671,**

the V_L-CDR1 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 82-92, 417-426, 672-699,**

the V_L-CDR2 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 102-111, 427-428, 700-727, and**

the V_L-CDR3 comprises an amino acid sequence having at least 60%, at least 70%, at least 80%, at least 90%, or 100% sequence identity to any amino acid sequence according to **SEQ ID NOs: 117-127, 429-434, 728-755.**

264. The use of any one of claims 252-263, wherein the anti-Gal3 antibody or binding fragment comprises:

1) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 136** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 161**;

2) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 137** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162**;

3) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 138** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 163**;

4) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 164**;

5) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 171**;

6) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 140** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 165**;

7) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 141** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 166**;

8) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 142** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 167**;

9) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 143** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 168**;

10) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 144** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 169**;

11) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 145** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 170**;

12) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 146** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 172**;

13) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 148** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 174**;

14) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 436** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 451**;

15) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 438** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 453**;

16) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 439** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162**;

17) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 440** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 454**;

18) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 441** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 455**;

19) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 442** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 456**;

20) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 443** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 457**;

21) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 444** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 458**;

22) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 445** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 459**;

23) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 446** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 460**;

24) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 447** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 461**;

25) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 448** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 462**;

26) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 449** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 463**;

27) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 450** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 464**;

28) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 756** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 784**;

29) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 757** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 785**;

30) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 758** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 786**;

31) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 759** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 787**;

32) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 760** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 788**;

33) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 761** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 789**;

34) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 762** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 790**;

35) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 763** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 791**;

36) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 764** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 792**;

37) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 765** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 793**;

38) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 766** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 794**;

39) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 767** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 795**;

40) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 768** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 796**;

41) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 769** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 797**;

42) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 770** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 798**;

43) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 771** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 799**;

44) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 772** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 800**;

45) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 773** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 801**;

46) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 774** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 802**;

47) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 775** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 803**;

48) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 776** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 804**;

49) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 777** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 805**;

50) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 778** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 806**;

51) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 779** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 807**;

52) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 780** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 808**;

53) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 781** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 809**;

54) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 782** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 810**; or

55) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 783** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 811**.

265. The use of any one of claims 252-264, wherein the antibody or binding fragment comprises:

1) the heavy chain variable region of **SEQ ID NO: 136** and the light chain variable region of **SEQ ID NO: 161**;

2) the heavy chain variable region of **SEQ ID NO: 137** and the light chain variable region of **SEQ ID NO: 162**;

3) the heavy chain variable region of **SEQ ID NO: 138** and the light chain variable region of **SEQ ID NO: 163**;

4) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 164**;

5) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 171**;

6) the heavy chain variable region of **SEQ ID NO: 140** and the light chain variable region of **SEQ ID NO: 165**;

7) the heavy chain variable region of **SEQ ID NO: 141** and the light chain variable region of **SEQ ID NO: 166**;

8) the heavy chain variable region of **SEQ ID NO: 142** and the light chain variable region of **SEQ ID NO: 167**;

9) the heavy chain variable region of **SEQ ID NO: 143** and the light chain variable region of **SEQ ID NO: 168**;

10) the heavy chain variable region of **SEQ ID NO: 144** and the light chain variable region of **SEQ ID NO: 169**;

11) the heavy chain variable region of **SEQ ID NO: 145** and the light chain variable region of **SEQ ID NO: 170**;

12) the heavy chain variable region of **SEQ ID NO: 146** and the light chain variable region of **SEQ ID NO: 172**;

13) the heavy chain variable region of **SEQ ID NO: 148** and the light chain variable region of **SEQ ID NO: 174**;

14) the heavy chain variable region of **SEQ ID NO: 436** and the light chain variable region of **SEQ ID NO: 451**;

15) the heavy chain variable region of **SEQ ID NO: 438** and the light chain variable region of **SEQ ID NO: 453**;

16) the heavy chain variable region of **SEQ ID NO: 439** and the light chain variable region of **SEQ ID NO: 162**;

17) the heavy chain variable region of **SEQ ID NO: 440** and the light chain variable region of **SEQ ID NO: 454**;

18) the heavy chain variable region of **SEQ ID NO: 441** and the light chain variable region of **SEQ ID NO: 455**;

19) the heavy chain variable region of **SEQ ID NO: 442** and the light chain variable region of **SEQ ID NO: 456**;

20) the heavy chain variable region of **SEQ ID NO: 443** and the light chain variable region of **SEQ ID NO: 457**;

21) the heavy chain variable region of **SEQ ID NO: 444** and the light chain variable region of **SEQ ID NO: 458**;

22) the heavy chain variable region of **SEQ ID NO: 445** and the light chain variable region of **SEQ ID NO: 459**;

23) the heavy chain variable region of **SEQ ID NO: 446** and the light chain variable region of **SEQ ID NO: 460**;

24) the heavy chain variable region of **SEQ ID NO: 447** and the light chain variable region of **SEQ ID NO: 461**;

25) the heavy chain variable region of **SEQ ID NO: 448** and the light chain variable region of **SEQ ID NO: 462**;

26) the heavy chain variable region of **SEQ ID NO: 449** and the light chain variable region of **SEQ ID NO: 463**;

27) the heavy chain variable region of **SEQ ID NO: 450** and the light chain variable region of **SEQ ID NO: 464**;

28) the heavy chain variable region of **SEQ ID NO: 756** and the light chain variable region of **SEQ ID NO: 784**;

29) the heavy chain variable region of **SEQ ID NO: 757** and the light chain variable region of **SEQ ID NO: 785**;

30) the heavy chain variable region of **SEQ ID NO: 758** and the light chain variable region of **SEQ ID NO: 786**;

31) the heavy chain variable region of **SEQ ID NO: 759** and the light chain variable region of **SEQ ID NO: 787**;

32) the heavy chain variable region of **SEQ ID NO: 760** and the light chain variable region of **SEQ ID NO: 788**;

33) the heavy chain variable region of **SEQ ID NO: 761** and the light chain variable region of **SEQ ID NO: 789**;

34) the heavy chain variable region of **SEQ ID NO: 762** and the light chain variable region of **SEQ ID NO: 790**;

35) the heavy chain variable region of **SEQ ID NO: 763** and the light chain variable region of **SEQ ID NO: 791**;

36) the heavy chain variable region of **SEQ ID NO: 764** and the light chain variable region of **SEQ ID NO: 792**;

37) the heavy chain variable region of **SEQ ID NO: 765** and the light chain variable region of **SEQ ID NO: 793**;

38) the heavy chain variable region of **SEQ ID NO: 766** and the light chain variable region of **SEQ ID NO: 794**;

39) the heavy chain variable region of **SEQ ID NO: 767** and the light chain variable region of **SEQ ID NO: 795**;

40) the heavy chain variable region of **SEQ ID NO: 768** and the light chain variable region of **SEQ ID NO: 796**;

41) the heavy chain variable region of **SEQ ID NO: 769** and the light chain variable region of **SEQ ID NO: 797**;

42) the heavy chain variable region of **SEQ ID NO: 770** and the light chain variable region of **SEQ ID NO: 798**;

43) the heavy chain variable region of **SEQ ID NO: 771** and the light chain variable region of **SEQ ID NO: 799**;

44) the heavy chain variable region of **SEQ ID NO: 772** and the light chain variable region of **SEQ ID NO: 800**;

45) the heavy chain variable region of **SEQ ID NO: 773** and the light chain variable region of **SEQ ID NO: 801**;

46) the heavy chain variable region of **SEQ ID NO: 774** and the light chain variable region of **SEQ ID NO: 802**;

47) the heavy chain variable region of **SEQ ID NO: 775** and the light chain variable region of **SEQ ID NO: 803**;

48) the heavy chain variable region of **SEQ ID NO: 776** and the light chain variable region of **SEQ ID NO: 804**;

49) the heavy chain variable region of **SEQ ID NO: 777** and the light chain variable region of **SEQ ID NO: 805**;

50) the heavy chain variable region of **SEQ ID NO: 778** and the light chain variable region of **SEQ ID NO: 806**;

51) the heavy chain variable region of **SEQ ID NO: 779** and the light chain variable region of **SEQ ID NO: 807**;

52) the heavy chain variable region of **SEQ ID NO: 780** and the light chain variable region of **SEQ ID NO: 808**;

53) the heavy chain variable region of **SEQ ID NO: 781** and the light chain variable region of **SEQ ID NO: 809**;

54) the heavy chain variable region of **SEQ ID NO: 782** and the light chain variable region of **SEQ ID NO: 810**; or

55) the heavy chain variable region of **SEQ ID NO: 783** and the light chain variable region of **SEQ ID NO: 811**.

266. The use of any one of claims 252-265, wherein the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 847.14H4, 846T.1H2, IMT001, 4A11.2B5, 4A11.H1L1, 4A11.H4L2, 4G2.2G6, 6B3.2D3, 6H6.2D6, 9H2.2H10, 13G4.2F8, 13H12.2F8, 15G7.2A7, 19D9.2E5, 23B10.2B12, 24D12.2H9, 846.2D4, 846.2F11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, or a binding fragment thereof.

267. The use of any one of claims 252-266, wherein the anti-Gal3 antibody or binding fragment is selected from the group consisting of: 6H6.2D6, 20H5.A3, 20D11.2C6, 4G2.2G6, 13H12.2F8, 19B5.2E6, 15G7.2A7, 23H9.2E4, 19D9.2E5, 2D10.2B2, 4A11.2B5, 14H10.2C9, 3B11.2G2, 13A12.2E5, 7D8.2D8, 15F10.2D6, 23B10.2B12, 12G5.D7, 24D12.2H9, 6B3.2D3, 13G4.2F8, 9H2.2H10, 846.1F5, 846.2H3, 846T.1H2, IMT-001, 4A11.H3L1, 4A11.H1L1 and 4A11.H4L2, or a binding fragment thereof.

268. The use of any one of claims 252-267, wherein the anti-Gal3 antibody or binding fragment is 2D10.2B2 or 6H6.2D6, or a binding fragment thereof.

269. The use of any one of claims 252-268, wherein the anti-Gal3 antibody or binding fragment is selected from the group consisting of 2D10.2B2 and 6H6.2D6, or a binding fragment thereof.

270. The use of any one of claims 252-269, wherein the anti-Gal3 antibody or binding fragment is used as a supplement to a standard of care treatment.

271. The use of claim 270, wherein the standard of care treatment comprises surgery, radiation, chemotherapy, targeted therapy, immunotherapy, a PD1/PDL1 blockade therapy, a CTLA4 blockade therapy, temozolomide, or any combination thereof.

272. An antibody or binding fragment thereof that binds to an N-terminal domain and/or the TRD of Gal3.

273. An antibody or binding fragment thereof that binds to an epitope present within a region of Gal3, wherein the epitope comprises:

- (a) Peptide 1 (ADNFSLHDALSGSGNPNPQG; **SEQ ID NO: 3**);
 - (b) Peptide 6 (GAYPGQAPPGAYPGAPGAYP; **SEQ ID NO: 8**); or
 - (c) Peptide 7 (AYPGAPGAYPGAPAGVYPC; **SEQ ID NO: 9**);
- or any combination thereof.

274. The antibody or binding fragment thereof of claim 272 or 273, wherein the antibody or binding fragment thereof is 2D10.2B2, 6H6.2D6, or a binding fragment thereof.

275. The antibody or binding fragment thereof of claim 272 or 273, wherein the antibody or binding fragment thereof is selected from the group consisting of 2D10.2B2 and 6H6.2D6, or a binding fragment thereof.

276. The anti-Gal3 antibody or binding fragment thereof of any of the preceding claims for use in assisting a payload to cross a blood brain barrier of a subject.

277. The use of claim 276, wherein the subject has a neurological disorder.

278. A protein comprising one or more peptide sequences having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 18-27.

279. The protein of claim 278, wherein the protein is an antibody or binding fragment thereof.

280. The protein of claim 278 or 279, comprising:

- a) a V_H-CDR1 peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 18;
- b) a V_H-CDR2 peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 19;

c) a V_H-CDR3 peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 20;

d) a V_L-CDR1 peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 21;

e) a V_L-CDR2 peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 22;

f) a V_L-CDR3 peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 23;

g) a heavy chain variable region peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 24;

h) a light chain variable region peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 25;

i) a heavy chain peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 26;

j) a light chain peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to one or more of the peptide sequences of FIG. 27;

or any combination thereof.

281. The protein of any one of claims 278-280, comprising a peptide sequence having at least 80%, 85%, 90%, 95%, 99%, or 100% homology to a peptide sequence encoded by any one or more of the nucleic acid sequences of FIG. 37-40.

282. The protein of any one of claims 278-281, wherein the protein is an antibody or binding fragment thereof that binds to Gal3.

283. An antibody that binds to or blocks PGAPAPGVYP GPPSGPGAYP SSGQPSATGA.

CLAIMS

1. An anti-Gal3 antibody or binding fragment thereof comprising (1) a heavy chain variable region comprising a V_H-CDR1, a V_H-CDR2, and a V_H-CDR3, and (2) a light chain variable region comprising a V_L-CDR1, a V_L-CDR2, and a V_L-CDR3; wherein

the V_H-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 36-44, 588-615,**

the V_H-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 54-60, 616-643,**

the V_H-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 70-81, 644-671,**

the V_L-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 92-101, 672-699,**

the V_L-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 111-116, 700-727,** and

the V_L-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 127-135, 728-755.**

2. The anti-Gal3 antibody or binding fragment thereof of claim 1, wherein

- a. the heavy chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 147-160, 756-783;**
- b. the heavy chain variable region is selected from the group consisting of **SEQ ID NOs: 147-160, 756-783;**
- c. the light chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 173-187, 784-811.**
- d. the light chain variable region is selected from the group consisting of **SEQ ID NOs: 173-187, 784-811;** and/or
- e. the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10,

F849C.8H3, 846.2B11, 846.4D5, 846.2D4, 846.2F11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, F846C.1B2, F846C.1F5, F846C.1H12, F846C.2H3, F846TC.14E4, F846TC.16B5, F846TC.7F10, F849C.8D10, 846.4D5, or a binding fragment thereof.

3. An anti-Gal3 antibody or binding fragment thereof for use in the treatment of a neurodegenerative disorder in a subject in need thereof.

4. The anti-Gal3 antibody or binding fragment thereof for the use of claim 3, wherein

- a. the neurodegenerative disorder comprises inflammation, encephalitis, Alzheimer's disease, Parkinson's disease, Huntington's disease, traumatic brain injury, spinal injury, multiple sclerosis, amyotrophic lateral sclerosis, olfactory dysfunction, aphasia, Bell's palsy, transmissible spongiform encephalopathy, Creutzfeldt-Jakob disease, fatal familial insomnia, epilepsy, seizures, neurodevelopment, Tourette's syndrome, neuroinfectious disorders, meningitis, encephalitis, bovine spongiform encephalopathy, West Nile virus encephalitis, Neuro-AIDS, fragile X syndrome, Guillain-Barre syndrome, metastases to the brain, brain cancer, or any combination thereof;
- b. the neurological disorder is Alzheimer's disease, and wherein the anti-Gal3 antibody or binding fragment thereof disrupts binding between Gal3 and amyloid precursor protein (APP) or A β , or both;
- c. the anti-Gal3 antibody or binding fragment thereof promotes phagocytic function of microglia in the subject;
- d. the anti-Gal3 antibody or binding fragment thereof inhibits A β -mediated activation of microglia in the subject;
- e. the anti-Gal3 antibody or binding fragment thereof inhibits A β fibril or oligomer formation in the subject; and/or

- f. the anti-Gal3 antibody or binding fragment thereof disrupts an interaction between Gal3 and Toll-like receptor 4 (TLR4) or triggering receptor expressed on myeloid cells 2 (TREM2), or both.

5. An anti-Gal3 antibody or binding fragment thereof for use in the treatment of a proteopathy in a subject in need thereof.

6. The anti-Gal3 antibody or binding fragment thereof for the use of claim 5, wherein the proteopathy comprises Alzheimer's disease, cerebral β -amyloid angiopathy, retinal ganglion cell degeneration in glaucoma, Parkinson's disease, Lewy dementia, multiple system atrophy, synucleinopathy, Pick's disease, corticobasal degeneration, taupathy, frontotemporal lobar degeneration, Huntington's disease, dentatorubropallidolusian atrophy, spinal and bulbal muscular atrophy, spinocerebellar ataxia, fragile X syndrome, Baratela-Scott syndrome, Freidrich's ataxia, myotonic dystrophy, Alexander disease, familial British dementia, familial Danish dementia, Palizaeus-Merzbacher disease, seipinopathy, AA (secondary) amyloidosis, type II diabetes, fibrinogen amyloidosis, dialysis amyloidosis, inclusion body myositis/myopathy, familial amyloidotic neuropathy, senile systemic amyloidosis, serpinopathy, cardiac atrial amyloidosis, pituitary prolactinoma, insulin amyloidosis, corneal lactoferrin amyloidosis, pulmonary alveolar proteinosis, seminal vesicle amyloid, cutaneous lichen amyloidosis, Mallory bodies, or odontogenic (Pindborg) tumor amyloid, or any disease caused by the misfolding or aggregation of proteins, or any combination thereof.

7. An anti-Gal3 antibody or binding fragment thereof for use in promoting neuronal regeneration in a subject in need thereof.

8. The anti-Gal3 antibody or binding fragment thereof for the use of claim 7, wherein
- a. the subject comprises neuronal degeneration associated with inflammation, encephalitis, Alzheimer's disease, Parkinson's disease, Huntington's disease, traumatic brain injury, spinal injury, multiple sclerosis, amyotrophic lateral sclerosis, olfactory dysfunction, aphasia, Bell's palsy, transmissible spongiform encephalopathy, Creutzfeldt-Jakob disease, fatal familial insomnia, epilepsy, seizures, neurodevelopment, Tourette's syndrome, neuroinfectious disorders, meningitis, encephalitis, bovine spongiform encephalopathy, West Nile virus

encephalitis, Neuro-AIDS, fragile X syndrome, Guillain-Barre syndrome, metastases to the brain, brain cancer, or any combination thereof.

- b. the neuronal degeneration is associated with Alzheimer's disease, and wherein the anti-Gal3 antibody or binding fragment thereof disrupts binding between Gal3 and amyloid precursor protein (APP) or amyloid beta (A β), or both, in the subject;
- c. more than one anti-Gal3 antibody or binding fragment thereof is to be administered to the subject.

9. An antibody conjugate comprising:

an anti-Gal3 antibody or binding fragment thereof; and

a payload conjugated to the anti-Gal3 antibody or binding fragment thereof,

wherein

the antibody conjugate is able to cross a blood-brain barrier.

10. The antibody conjugate of claim 9, wherein

- a. the payload is not independently capable of crossing the blood-brain barrier or has low permeability across the blood-brain barrier without being conjugated to the anti-Gal3 antibody or binding fragment thereof;
- b. conjugation of the payload to the anti-Gal3 antibody or binding fragment thereof increases the permeability of the payload across the blood-brain barrier by at least 5%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%, 200%, 300%, 400%, or 500%, or any increase within a range defined by any two of the aforementioned percentages, compared to the unconjugated payload;
- c. the permeability of the payload across the blood-brain barrier is less than 95%, 90%, 80%, 70%, 60%, 50%, 40%, 30%, 20%, 10%, 9%, 8%, 7%, 6%, 5%, 4%, 3%, 2%, or 1% of the permeability of the antibody conjugate across the blood-brain barrier;
- d. the payload is a cytotoxic payload, microtubule disrupting agent, DNA modifying agent, Akt inhibitor, polymerase inhibitor, detectable moiety, immunomodulatory agent, immune modulator, immunotoxin, nucleic acid polymer, aptamer, peptide, protein, enzyme, or any combination thereof;

- e. the payload is a second antibody;
- f. the antibody conjugate is formulated to be administered enterally, orally, intranasally, parenterally, intracranially, subcutaneously, intramuscularly, intradermally, or intravenously, or any combination thereof; and/or
- g. the anti-Gal3 antibody or binding fragment thereof binds to the N-terminal domain of Gal3, N-terminus of Gal3, or the tandem repeat domain (TRD) of Gal3.

11. Use of an anti-Gal3 antibody or binding fragment thereof and a payload conjugated to the anti-Gal3 antibody or binding fragment thereof, wherein the antibody conjugate is able to cross a blood-brain barrier, in the preparation of a composition for delivering the payload to the central nervous system of a subject in need thereof.

12. The use of claim 11, wherein

- a. the antibody conjugate is to be administered to the subject;
- b. the payload does not normally cross the blood-brain barrier;
- c. conjugating the payload to the anti-Gal3 antibody or binding fragment thereof increases the permeability of the payload across the blood-brain barrier by at least 5%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%, 200%, 300%, 400%, or 500%, or any increase within a range defined by any two of the aforementioned percentages, compared to the unconjugated payload;
- d. permeability of the payload across the blood-brain barrier is less than 95%, 90%, 80%, 70%, 60%, 50%, 40%, 30%, 20%, 10%, 9%, 8%, 7%, 6%, 5%, 4%, 3%, 2%, or 1% of the permeability of the antibody conjugate across the blood-brain barrier;
- e. the payload is a cytotoxic payload, microtubule disrupting agent, DNA modifying agent, Akt inhibitor, polymerase inhibitor, detectable moiety, immunomodulatory agent, immune modulator, immunotoxin, nucleic acid polymer, aptamer, peptide, protein, enzyme, or any combination thereof; or
- f. the payload is a second antibody.

13. Use of

an anti-Gal3 antibody or binding fragment thereof specific for the N-terminal domain of Gal3, N-terminus of Gal3, or the TRD of Gal3; in the preparation of a medicament for disrupting an interaction between Gal3 and a tumor cell surface; wherein the tumor cell surface marker is selected from the group consisting of VEGFR1, VEGFR2, VEGFR3, EGFR, PDGFRa, PDGFRb, ErbB2, HGFR (cMet), TNF sRI, CTLA4, CD47, PD-L1, FGFR1 alpha-IIIb, FGFR1 alpha-IIIc, FGFR2 alpha-IIIc, FGFR3 IIIc, and FGFR4.

14. An *in vitro* method for identifying an antibody or binding fragment capable of disrupting an interaction between Gal3 and a TGF-b receptor, the method comprising:

- (a) contacting Gal3 protein with an antibody or binding fragment that selectively binds to Gal3, thereby forming a Gal3-antibody complex;
- (b) contacting the Gal3-antibody complex with the TGF-b receptor protein;
- (c) removing unbound TGF-b receptor protein; and
- (d) detecting TGF-b receptor protein bound to the Gal3-antibody complex, wherein the antibody or binding fragment is capable of disrupting an interaction of Gal3 and the TGF-b receptor when the TGF-b receptor protein is not detected in (d).

15. Use of an anti-Gal3 antibody or binding fragment in the preparation of a medicament or composition for the treatment of fibrosis, liver fibrosis, non-alcoholic fatty liver disease (NAFLD), non-alcoholic steatohepatitis (NASH), kidney fibrosis, cardiac fibrosis, arterial fibrosis, venous thrombosis, pulmonary fibrosis, or an immune related disorder.

16. The use of claim 15, wherein

- a. the immune-related disorder is sepsis, atopic dermatitis, or psoriasis;
- b. the immune-related disorder is cancer;
- c. the medicament is used as a supplement to PD1/PDL1 blockade therapies or CTLA4 blockade therapies;
- d. the PD1/PDL1 blockade therapies comprise pembrolizumab, nivolumab, cemiplimab, spartalizumab, camrelizumab, sintilimab, tislelizumab,

- toripalimab, AMP-224, AMP-514, atezolizumab, avelumab, durvalumab, KN035, CK-301, AUNP12, CA-170, and/or BMS-986189; and/or
- e. the CTLA4 blockade therapy comprises ipilimumab and/or tremilimumab.

17. Use of an anti-Gal3 antibody or binding fragment thereof in the preparation of a medicament for the treatment of fibrosis, liver fibrosis, NAFLD, NASH, kidney fibrosis, cardiac fibrosis, arterial fibrosis, venous thrombosis, or pulmonary fibrosis.

18. The anti-Gal3 antibody or binding fragment thereof of claim 1 or 2; the anti-Gal 3 antibody or binding fragment thereof for the use of any one of claims 3 to 8; the antibody conjugate of claim 9 or 10; the use of any one of claims 11 to 13 or 15-17; or the *in vitro* method of claim 14; wherein

- a. the anti-Gal3 antibody or binding fragment thereof binds to one or more peptides of **SEQ ID NOs: 3-26**;
- b. the anti-Gal3 antibody or binding fragment thereof binds to the N-terminal domain of Gal3, N-terminus of Gal3, or the tandem repeat domain (TRD) of Gal3;
- c. the anti-Gal3 antibody or binding fragment thereof comprising (1) a heavy chain variable region comprises a V_H-CDR1, a V_H-CDR2, and a V_H-CDR3, and (2) a light chain variable region comprising a V_L-CDR1, a V_L-CDR2, and a V_L-CDR3; wherein
 - the V_H-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 27-44, 245-246, 588-615**,
 - the V_H-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 45-60, 247-248, 616-643**,
 - the V_H-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 61-81, 249-250, 644-671**,
 - the V_L-CDR1 comprises an amino acid sequence selected from **SEQ ID NOs: 82-101, 251-252, 672-699**,
 - the V_L-CDR2 comprises an amino acid sequence selected from **SEQ ID NOs: 102-116, 253, 700-727**, and

the V_L-CDR3 comprises an amino acid sequence selected from **SEQ ID NOs: 117-135, 254-255, 728-755;**

- d. the heavy chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 136-160, 256-257, 756-783;**
- e. the heavy chain variable region is selected from the group consisting of **SEQ ID NOs: 136-160, 256-257, 756-783;**
- f. the light chain variable region comprises an amino acid sequence having at least 75%, 80%, 85%, 90%, 95%, or 100% sequence identity to any sequence according to **SEQ ID NOs: 161-187, 258-259, 784-811;** or
- g. the light chain variable region is selected from the group consisting of **SEQ ID NOs: 161-187, 258-259 784-811.**

19. The anti-Gal3 antibody or binding fragment thereof of claim 1 or 2, the anti-Gal 3 antibody or binding fragment thereof for the use of any one of claims 3 to 8; the antibody conjugate of claim 9 or 10; the use of any one of claims 11 to 13 or 15-17; or the *in vitro* method of claim 14; wherein

- a. the anti-Gal3 antibody or binding fragment thereof is selected from the group consisting of TB001, TB006, 12G5.D7, 13A12.2E5, 14H10.2C9, 15F10.2D6, 19B5.2E6, 20D11.2C6, 20H5.A3, 23H9.2E4, 2D10.2B2, 3B11.2G2, 7D8.2D8, F846C.1B2, F846C.1F5, F846C.1H12, F846C.1H5, F846C.2H3, F846TC.14A2, F846TC.14E4, F846TC.16B5, F846TC.7F10, F847C.10B9, F847C.11B1, F847C.12F12, F847C.26F5, F847C.4B10, F849C.8D10, F849C.8H3, 846.2B11, 846.4D5, 847.14H4, 846T.1H2, mIMT001, 4A11.2B5, 4A11.H1L1, 4A11.H4L2, 4G2.2G6, 6B3.2D3, 6H6.2D6, 9H2.2H10, 13G4.2F8, 13H12.2F8, 15G7.2A7, 19D9.2E5, 23B10.2B12, 24D12.2H9, 846.2D4, 846.2F11, 846T.10B1, 846T.2E3, 846T.4C9, 846T.4E11, 846T.4F5, 846T.8D1, 847.10C9, 847.11D6, 847.15D12, 847.15F9, 847.15H11, 847.20H7, 847.21B11, 847.27B9, 847.28D1, 847.2B8, 847.3B3, 849.1D2, 849.2D7, 849.2F12, 849.4B2, 849.4F12, 849.4F2, 849.5C2, 849.8D12, F847C.21H6, or a binding fragment thereof;

- b. the anti-Gal3 antibody or binding fragment thereof is to be administered enterally, orally, intranasally, parenterally, intracranially, subcutaneously, intramuscularly, intradermally, or intravenously, or any combination thereof;
- c. the anti-Gal3 antibody or binding fragment thereof is able to cross the blood-brain barrier;
- d. the anti-Gal3 antibody or binding fragment is used as a supplement to a standard of care treatment; and/or
- e. the anti-Gal3 antibody or binding fragment is used as a supplement to surgery, radiation, chemotherapy, targeted therapy, immunotherapy, a PD1/PDL1 blockade therapy, a CTLA4 blockade therapy, temozolomide, or any combination thereof.

20. The anti-Gal3 antibody or binding fragment thereof claim 1 or 2, the anti-Gal 3 antibody or binding fragment thereof for the use of any one of claims 3 to 8; the antibody conjugate of claim 9 or 10; the use of any one of claims 11 to 13 or 15-17; or the *in vitro* method of claim 14; wherein the anti-Gal3 antibody or binding fragment thereof comprises:

1) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 136** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 161**;

2) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 137** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 162**;

3) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 138** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 163**;

4) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 164**;

5) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 140** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 165**;

6) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 141** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 166**;

7) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 142** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 167**;

8) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 143** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 168**;

9) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 144** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 169**;

10) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 145** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 170**;

11) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 139** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 171**;

12) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 146** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 172**;

13) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 147** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 173**;

14) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 148** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 174**;

15) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 149** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 175**;

16) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 150** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 176**;

17) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 151** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 177**;

18) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 152** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 178**;

19) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 153** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 179**;

20) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 154** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 180**;

21) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 181**;

22) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 156** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 182**;

23) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 157** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 183**;

24) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 155** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 184**;

25) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 158** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 185**;

26) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 159** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 186**;

27) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 160** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 187**;

28) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 256** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 258**;

29) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 257** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 259**;

30) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 756** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 784**;

31) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 757** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 785**;

32) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 758** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 786**;

33) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 759** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 787**;

34) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 760** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 788**;

35) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 761** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 789**;

36) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 762** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 790**;

37) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 763** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 791**;

38) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 764** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 792**;

39) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 765** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 793**;

40) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 766** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 794**;

41) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 767** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 795**;

42) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 768** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 796**;

43) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 769** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 797**;

44) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 770** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 798**;

45) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 771** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 799**;

46) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 772** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 800**;

47) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 773** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 801**;

48) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 774** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 802**;

49) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 775** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 803**;

50) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 776** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 804**;

51) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 777** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 805**;

52) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 778** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 806**;

53) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 779** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 807**;

54) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 780** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 808**;

55) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 781** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 809**;

56) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 782** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 810**; or

57) the V_H-CDR1, V_H-CDR2, V_H-CDR3 of the V_H-CDR1, V_H-CDR2, V_H-CDR3 within **SEQ ID NO: 783** and the V_L-CDR1, V_L-CDR2, V_L-CDR3 of the V_L-CDR1, V_L-CDR2, V_L-CDR3 within **SEQ ID NO: 811**.

21. The anti-Gal3 antibody of claim 1 or 2; the anti-Gal 3 antibody or binding fragment thereof for the use of any of the claims 3 to 8; the antibody conjugate of claim 9 or 10; the use of any one of claims 11 to 13 or 15-17; or the *in vitro* method of claim 14; wherein the anti-Gal3 antibody or binding fragment thereof comprises:

1) the heavy chain variable region of **SEQ ID NO: 136** and the light chain variable region of **SEQ ID NO: 161**;

2) the heavy chain variable region of **SEQ ID NO: 137** and the light chain variable region of **SEQ ID NO: 162**;

3) the heavy chain variable region of **SEQ ID NO: 138** and the light chain variable region of **SEQ ID NO: 163**;

4) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 164**;

5) the heavy chain variable region of **SEQ ID NO: 140** and the light chain variable region of **SEQ ID NO: 165**;

6) the heavy chain variable region of **SEQ ID NO: 141** and the light chain variable region of **SEQ ID NO: 166**;

7) the heavy chain variable region of **SEQ ID NO: 142** and the light chain variable region of **SEQ ID NO: 167**;

8) the heavy chain variable region of **SEQ ID NO: 143** and the light chain variable region of **SEQ ID NO: 168**;

9) the heavy chain variable region of **SEQ ID NO: 144** and the light chain variable region of **SEQ ID NO: 169**;

10) the heavy chain variable region of **SEQ ID NO: 145** and the light chain variable region of **SEQ ID NO: 170**;

11) the heavy chain variable region of **SEQ ID NO: 139** and the light chain variable region of **SEQ ID NO: 171**;

12) the heavy chain variable region of **SEQ ID NO: 146** and the light chain variable region of **SEQ ID NO: 172**;

13) the heavy chain variable region of **SEQ ID NO: 147** and the light chain variable region of **SEQ ID NO: 173**;

14) the heavy chain variable region of **SEQ ID NO: 148** and the light chain variable region of **SEQ ID NO: 174**;

15) the heavy chain variable region of **SEQ ID NO: 149** and the light chain variable region of **SEQ ID NO: 175**;

16) the heavy chain variable region of **SEQ ID NO: 150** and the light chain variable region of **SEQ ID NO: 176**;

17) the heavy chain variable region of **SEQ ID NO: 151** and the light chain variable region of **SEQ ID NO: 177**;

18) the heavy chain variable region of **SEQ ID NO: 152** and the light chain variable region of **SEQ ID NO: 178**;

19) the heavy chain variable region of **SEQ ID NO: 153** and the light chain variable region of **SEQ ID NO: 179**;

20) the heavy chain variable region of **SEQ ID NO: 154** and the light chain variable region of **SEQ ID NO: 180**;

21) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 181**;

22) the heavy chain variable region of **SEQ ID NO: 156** and the light chain variable region of **SEQ ID NO: 182**;

23) the heavy chain variable region of **SEQ ID NO: 157** and the light chain variable region of **SEQ ID NO: 183**;

24) the heavy chain variable region of **SEQ ID NO: 155** and the light chain variable region of **SEQ ID NO: 184**;

25) the heavy chain variable region of **SEQ ID NO: 158** and the light chain variable region of **SEQ ID NO: 185**;

26) the heavy chain variable region of **SEQ ID NO: 159** and the light chain variable region of **SEQ ID NO: 186**;

27) the heavy chain variable region of **SEQ ID NO: 160** and the light chain variable region of **SEQ ID NO: 187**;

28) the heavy chain variable region of **SEQ ID NO: 256** and the light chain variable region of **SEQ ID NO: 258**;

29) the heavy chain variable region of **SEQ ID NO: 257** and the light chain variable region of **SEQ ID NO: 259**;

30) the heavy chain variable region of **SEQ ID NO: 756** and the light chain variable region of **SEQ ID NO: 784**;

31) the heavy chain variable region of **SEQ ID NO: 757** and the light chain variable region of **SEQ ID NO: 785**;

32) the heavy chain variable region of **SEQ ID NO: 758** and the light chain variable region of **SEQ ID NO: 786**;

33) the heavy chain variable region of **SEQ ID NO: 759** and the light chain variable region of **SEQ ID NO: 787**;

34) the heavy chain variable region of **SEQ ID NO: 760** and the light chain variable region of **SEQ ID NO: 788**;

35) the heavy chain variable region of **SEQ ID NO: 761** and the light chain variable region of **SEQ ID NO: 789**;

36) the heavy chain variable region of **SEQ ID NO: 762** and the light chain variable region of **SEQ ID NO: 790**;

37) the heavy chain variable region of **SEQ ID NO: 763** and the light chain variable region of **SEQ ID NO: 791**;

38) the heavy chain variable region of **SEQ ID NO: 764** and the light chain variable region of **SEQ ID NO: 792**;

39) the heavy chain variable region of **SEQ ID NO: 765** and the light chain variable region of **SEQ ID NO: 793**;

40) the heavy chain variable region of **SEQ ID NO: 766** and the light chain variable region of **SEQ ID NO: 794**;

41) the heavy chain variable region of **SEQ ID NO: 767** and the light chain variable region of **SEQ ID NO: 795**;

42) the heavy chain variable region of **SEQ ID NO: 768** and the light chain variable region of **SEQ ID NO: 796**;

43) the heavy chain variable region of **SEQ ID NO: 769** and the light chain variable region of **SEQ ID NO: 797**;

44) the heavy chain variable region of **SEQ ID NO: 770** and the light chain variable region of **SEQ ID NO: 798**;

45) the heavy chain variable region of **SEQ ID NO: 771** and the light chain variable region of **SEQ ID NO: 799**;

46) the heavy chain variable region of **SEQ ID NO: 772** and the light chain variable region of **SEQ ID NO: 800**;

47) the heavy chain variable region of **SEQ ID NO: 773** and the light chain variable region of **SEQ ID NO: 801**;

48) the heavy chain variable region of **SEQ ID NO: 774** and the light chain variable region of **SEQ ID NO: 802**;

49) the heavy chain variable region of **SEQ ID NO: 775** and the light chain variable region of **SEQ ID NO: 803**;

50) the heavy chain variable region of **SEQ ID NO: 776** and the light chain variable region of **SEQ ID NO: 804**;

51) the heavy chain variable region of **SEQ ID NO: 777** and the light chain variable region of **SEQ ID NO: 805**;

52) the heavy chain variable region of **SEQ ID NO: 778** and the light chain variable region of **SEQ ID NO: 806**;

53) the heavy chain variable region of **SEQ ID NO: 779** and the light chain variable region of **SEQ ID NO: 807**;

54) the heavy chain variable region of **SEQ ID NO: 780** and the light chain variable region of **SEQ ID NO: 808**;

55) the heavy chain variable region of **SEQ ID NO: 781** and the light chain variable region of **SEQ ID NO: 809**;

56) the heavy chain variable region of **SEQ ID NO: 782** and the light chain variable region of **SEQ ID NO: 810**; or

57) the heavy chain variable region of **SEQ ID NO: 783** and the light chain variable region of **SEQ ID NO: 811**.